



December 31, 2009

**VIA ELECTRONIC FILING**

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, D.C. 20426

**Re: *North American Electric Reliability Corporation,  
Docket No. RM06-16-000***

Dear Ms. Bose:

The North American Electric Reliability Corporation (“NERC”) hereby submits this petition in accordance with Section 215(d)(1) of the Federal Power Act (“FPA”) and Part 39.5 of the Federal Energy Regulatory Commission’s (“FERC”) regulations seeking approval of the following proposed Interconnection Reliability Operating Limit (“IRO”) standards set forth as **Exhibit A** to this petition that were approved by the NERC Board of Trustees on October 17, 2008:

- IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments;
- IRO-009-1 — Reliability Coordinator Actions to Operate Within IROLs; and
- IRO-010-1a<sup>1</sup> — Reliability Coordinator Data Specification and Collection.

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<sup>1</sup> The NERC Board of Trustees approved the proposed IRO-010-1 Reliability Standard on October 17, 2008. Subsequently, on August 5, 2009, the NERC Board of Trustees approved an interpretation to the proposed IRO-010-1 standard. Accordingly, NERC is herein requesting approval of both the proposed standard and the appended interpretation, and has designated the proposed standard and appended interpretation in this filing as IRO-010-1a.

In developing the “new” standards proposed in this filing, the standard drafting team also addressed some of FERC’s directives in Order No. 693.<sup>2</sup> In doing so, the standard drafting team determined that it was necessary to revise some additional requirements in FERC-approved Reliability Standards so that the requirements are consistent with and not duplicative of the new standards being proposed in this filing. Accordingly, as explained below, the Implementation Plan for the new IRO standards calls for modifications to or deletions of the following standards:

- EOP-001-0<sup>3</sup> — Emergency Operations Planning
  - Retire Requirement R2
- IRO-002-1 — Reliability Coordination — Facilities
  - Retire Requirement R2
- IRO-004-1 — Reliability Coordination — Operations Planning
  - Retire Requirements R1 through R6
- IRO-005-2 — Reliability Coordination — Current Day Operations
  - Retire Requirements R2, R3, and R5; modify Requirements R9, R13, and R14; retire R16 and R17
- TOP-003-0 — Planned Outage Coordination
  - Modify Requirement R1.2

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<sup>2</sup> See *Mandatory Reliability Standards for the Bulk-Power System*, 18 CFR Part 40, Docket No. RM06-16-000 (March 16, 2007) (“Order No. 693”) at PP 627-630, 636-638.

<sup>3</sup> NERC recognizes that revised standard EOP-001 is included for approval in this filing as well as in the filing requesting approval of Emergency Preparedness and Operations Reliability Standards (“System Restoration and Blackstart Filing”) of December 31, 2009. The modifications proposed to the EOP-001 standard in this filing and in the System Restoration and Blackstart Filing include changes unique to each project. NERC cannot predict the outcome or sequence in which FERC will act on these filings. Therefore, NERC includes in Exhibit A a proposed Version 1 of EOP-001 that exclusively contains the changes directed by the IRO project in the event FERC acts on this filing before the System Restoration and Blackstart Filing or if the System Restoration and Blackstart Filing is remanded before the IRO filing is acted upon. In the event that FERC acts to approve the System Restoration and Blackstart Filing first, NERC also includes in Exhibit B Version 2 of EOP-001 that contains both the System Restoration and Blackstart team directed changes and those proposed in this IRO filing. Because EOP-001-0 is the currently-approved standard in effect, the changes proposed in this filing are applied against this Version 0. Should the System Restoration and Blackstart Filing be affirmatively acted upon first, NERC modifies its requests for FERC approval of EOP-001-2 as provided in Exhibit B.

- TOP-005-1 — Operational Reliability Information
  - Retire Requirements R1 and R1.1
  - Modify Attachment 1
- TOP-006-1 — Monitoring System Conditions
  - Modify Requirement R4

Therefore, revised Reliability Standards EOP-001-1, IRO-002-2, IRO-004-2, IRO-005-3, TOP-003-1, TOP-005-2 and TOP-006-2 are also proposed for approval in this filing.

NERC is also requesting in this filing approval of the following two new definitions:

- Operational Planning Analysis
- Real-time Assessment

This filing discusses each of the three new standards (IRO-008-1, IRO-009-1 and IRO-010-1a), including how the standards meet the criteria identified by FERC in Order No. 672<sup>4</sup> for approving Reliability Standards, and the basis for the proposed changes to the other listed standards.

This filing consists of the following:

- This transmittal letter;
- A table of contents ;
- A narrative description explaining how the proposed Reliability Standards meet FERC's requirements;
- Reliability Standards and definitions submitted for approval or modification (**Exhibit A**);

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<sup>4</sup> See *Rules Concerning Certification of the Electric Reliability Organization; Procedures for the Establishment, Approval and Enforcement of Electric Reliability Standards*, FERC Stats. & Regs., ¶ 31,204 at PP 320-338 (“Order No. 672”), *order on reh’g*, FERC Stats. & Regs. ¶ 31,212 (2006) (“Order No. 672-A”).

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- Reliability Standards EOP-001-2 Proposed for Approval (to be substituted for proposed EOP-001-1 in the event FERC approves NERC's System Restoration and Blackstart Filing before acting on EOP-001-1) (**Exhibit B**);
- Standard Drafting Team Roster (**Exhibit C**);
- Development Record of the proposed Reliability Standards (**Exhibit D**); and,
- Development Record of the proposed Interpretation to IRO-010-1 (**Exhibit E**)

Please contact me if you have any questions regarding this filing.

Respectfully submitted,

/s/ Holly A. Hawkins

Holly A. Hawkins

*Attorney for North American Electric  
Reliability Corporation*

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**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION**

**) Docket No. RM06-16-000  
)**

**PETITION OF THE NORTH AMERICAN ELECTRIC RELIABILITY  
CORPORATION FOR APPROVAL OF PROPOSED NEW AND REVISED  
RELIABILITY STANDARDS FOR OPERATING WITHIN  
INTERCONNECTION OPERATING LIMITS**

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December 31, 2009

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## I. INTRODUCTION

The North American Electric Reliability Corporation (“NERC”)<sup>1</sup> hereby requests the Federal Energy Regulatory Commission (“FERC”) to approve, in accordance with Section 215(d)(1) of the Federal Power Act (“FPA”)<sup>2</sup> and Section 39.5 of FERC’s regulations, 18 C.F.R. § 39.5 the following new Reliability Standards:

- IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments;
- IRO-009-1 — Reliability Coordinator Actions to Operate Within IROLs; and
- IRO-010-1a — Reliability Coordinator Data Specification and Collection.

Additionally, NERC requests FERC approval of conforming changes to additional standards reflected in the proposed Reliability Standards EOP-001-1, IRO-002-2, IRO-004-2, IRO-005-3, TOP-003-1, TOP-005-2 and TOP-006-2. Specifically, these changes are:

- Retire IRO-004-1 Requirements R1 and R2 when IRO-008-1 becomes effective;
- Retire EOP-001-1 Requirement R2 when IRO-009-1 becomes effective;
- Retire IRO-004-1 Requirements R3 and R6 when IRO-009-1 becomes effective;
- Modify IRO-005-2 Requirement R14 when IRO-009-1 becomes effective;
- Retire IRO-005-2 Requirements R16 and R17 when IRO-009-1 becomes effective;
- Modify IRO-005-2 Requirements R9 and R13 when IRO-009-1 becomes effective;
- Retire IRO-002-1 Requirement R2 when IRO-010-1a becomes effective;
- Retire IRO-005-2 Requirement R2 when IRO-010-1a becomes effective;

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<sup>1</sup> NERC has been certified by FERC as the electric reliability organization (“ERO”) authorized by Section 215 of the Federal Power Act. FERC certified NERC as the ERO in its order issued July 20, 2006 in Docket No. RR06-1-000. 116 FERC ¶ 61,062 (2006) (“ERO Certification Order”).

<sup>2</sup> 16 U.S.C. 824o.

- Modify TOP-003-0 Requirement R1.2 when IRO-010-1a becomes effective;
- Modify TOP-005-1 Requirements R1 and R1.2 and modify Attachment 1 when IRO-010-1a becomes effective; and
- Modify TOP-006-1 Requirement R4 and Attachment 1 when IRO-010-1a becomes effective.

The NERC Board of Trustees approved the listed new or modified Reliability Standards on October 17, 2008, and the subsequent interpretation to IRO-010-1a on August 5, 2009. In this filing, NERC requests that FERC approve the proposed Reliability Standards and make them effective in accordance with the implementation plan accompanying this filing.

NERC also requests that FERC apply existing and FERC-approved Violation Risk Factors (“VRFs”) and Violation Severity Levels (“VSLs”) to the modified requirements proposed in this filing. This filing also identifies and seeks FERC approval for definitions for the following terms:

- Operational Planning Analysis; and
- Real-time Assessment.

**Exhibit A** to this filing sets forth the proposed Reliability Standards and definitions. **Exhibit B** includes the Reliability Standard EOP-001-2 proposed for approval, if necessary, for the reasons discussed in footnote 3, above. **Exhibit C** presents the roster for the drafting team that developed the proposed Reliability Standards. **Exhibit D** contains the complete development record of the proposed Reliability Standards. **Exhibit E** contains the complete development record for the interpretation to IRO-010-1. NERC is also filing these proposed Reliability Standards and interpretation with applicable governmental authorities in Canada.



## II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:

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## III. BACKGROUND

### a. Regulatory Framework

By enacting the Energy Policy Act of 2005,<sup>3</sup> Congress entrusted FERC with the duties of approving and enforcing rules to ensure the reliability of the Nation’s bulk power system, and with the duties of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to FERC approval. Section 215 states that all users, owners and operators of the bulk power system in the United States will be subject to the FERC-approved Reliability Standards.

The principal purpose of the proposed Reliability Standards, and associated conforming modifications to other existing approved Reliability Standards, is to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the

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<sup>3</sup> Energy Policy Act of 2005, Pub. L. No. 109-58, Title XII, Subtitle A, 119 Stat. 594, 941 (2005 (codified at 16 U.S.C. § 824o)).

interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (“IROLs”). Many elements contained in the set of proposed “Operate within IROL Standards” address the same or similar performance objectives as currently-existing requirements in FERC-approved Reliability Standards. To resolve potential discrepancies, and to better ensure prompt action to prevent or mitigate instances of exceeding IROLs, NERC recommends the retirement or revision of seven existing FERC-approved Reliability Standards coincident with the implementation of the proposed standards, as addressed in section IV of this filing.

#### **b. Basis for Approval of Proposed Reliability Standard**

Section 39.5(a) of FERC’s regulations requires the ERO to file with FERC for its approval each Reliability Standard that the ERO proposes to become mandatory and enforceable in the United States, and each modification to an approved Reliability Standard that the ERO proposes to be made effective. FERC has the regulatory responsibility to approve standards that protect the reliability of the bulk power system. In discharging its responsibility to review, approve, and enforce mandatory Reliability Standards, FERC is authorized to approve those proposed Reliability Standards that meet the criteria detailed by Congress:

*The Commission may approve, by rule or order, a proposed reliability standard or modification to a reliability standard if it determines that the standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest.*<sup>4</sup>

When evaluating proposed Reliability Standards, FERC is required by statute to give “due weight” to the technical expertise of the ERO. Order No. 672 provides guidance on the fifteen factors FERC will consider when determining whether proposed Reliability Standards meet the statutory criteria.<sup>5</sup>

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<sup>4</sup> Section 215(d)(2) of the FPA, 16 U.S.C. § 824o(d)(2) (2000).

<sup>5</sup> Order No. 672 at PP 320-338.

The new or modified standards proposed in this filing serve an important reliability goal: (1) to ensure the Reliability Coordinator is prepared to act to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by using data and information to determine how the bulk power system is operating in real-time, by looking ahead to see how the bulk power system is expected to operate through the next day, and (2) by having and executing action plans to either prevent or mitigate instances of exceeding IROLs.

### **c. Reliability Standards Development Procedure**

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which is incorporated into the Rules of Procedure as Appendix 3A. In its ERO Certification Order, FERC found that NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards and thus satisfies certain of the criteria for approving Reliability Standards.<sup>6</sup>

The Development Process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders and a vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard for submission to FERC.

The work culminating in this filing originated in 2002, predating the Version 0 Reliability Standards that took effect in April 2005. The description of the development history for the Reliability Standards focuses on the standard drafting team's activities since April 2005. However, from 2005 to 2007, the standard drafting team for the IRO project was primarily on

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<sup>6</sup> Order No. 672 at PP 268, 270.

hold due to the fact that the FAC-010-1, FAC-011-1 and FAC-014-1 standards were under development at that time and required much of the same resources that were required in developing the IRO standards. The proposed Reliability Standards and definitions set out in **Exhibit A** have been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*.<sup>7</sup> A narrative of this process appears in section VI of this filing. These proposed Reliability Standards were approved by the NERC Board of Trustees on October 17, 2008 and the proposed interpretation to IRO-010-1 was approved by the NERC Board of Trustees on August 5, 2009.

#### **d. Progress in Improving Proposed Reliability Standards**

NERC continues to develop new and revised Reliability Standards that address the issues NERC identified in its initial filing of proposed Reliability Standards on April 4, 2006, the concerns noted in the FERC Staff Report issued on May 11, 2006, and the directives FERC has made in several subsequent orders pertaining to Reliability Standards.<sup>8</sup> NERC has incorporated these activities into its *Reliability Standards Development Plan: 2009-2011*, submitted to FERC on February 3, 2009 and its *Reliability Standards Development Plan: 2010-2012*, submitted to FERC on December 2, 2009.

NERC has filed with the regulatory authorities in the U.S. and Canada petitions to approve numerous Reliability Standards that were proposed as new, modified, or retired

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<sup>7</sup> NERC's *Reliability Standards Development Procedure* is available on NERC's website at [http://www.nerc.com/fileUploads/File/Standards/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/fileUploads/File/Standards/RSDP_V6_1_12Mar07.pdf).

<sup>8</sup> *Rules Concerning Certification of the Electric Reliability Organization: Procedures for the Establishment, Approval and Enforcement of Electric Reliability Standards*, Order No. 672, 71 FR 8662 (February 17, 2006), FERC Stats. & Regs. ¶ 31,204 (2006), *order on reh'g*, Order No. 672-A, 71 FR 19814 (April 18, 2006), FERC Stats. & Regs. ¶ 31,212 (2006). (*Order 672*).  
*Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242 (2007) ("Order No. 693"), *order on reh'g*, *Mandatory Reliability Standards for the Bulk-Power System*, 120 FERC ¶ 61,053 ("Order No. 693-A") (2007).

Reliability Standards, as well as several interpretations, and, in the U.S., FERC has taken action on a large number of these standards and interpretations.

**e. Fundamental Issues Supporting the New IRO Standards**

Work in developing the IRO standards was initiated prior to the development of the Version 0 standards. In developing the IRO standards, the drafting team worked on the following assumptions:

- The IRO standards support the authorities and tasks identified in the NERC Functional Model;
- The IRO standards coordinate with other standards either already approved or also under development;
- Reliability Coordinators have either been through NERC’s organization certification process or have been through a reliability readiness audit to verify that the entity has the “capability” to perform the tasks assigned to the Reliability Coordinator; and
- New standards identify “what” performance is required without necessarily focusing on the details of “how” to accomplish the required performance.

As explained below, each of these assumptions had a significant impact on the work done to develop the IRO standards.

**i. The IRO standards support the authorities and assignment of tasks identified in the NERC Functional Model**

The NERC Functional Model was developed by first identifying all of the operating tasks necessary for reliability, and then assigning each of these operating tasks to a single functional entity.<sup>9</sup> This approach results in a clear identification of a single functional entity with responsibility for each reliability task.

The Functional Model clarified the hierarchy of authorities for both operating and planning entities. As identified in the August 2003 blackout investigation, a clear understanding of each entity’s authority and responsibility for each reliability task, especially during abnormal

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<sup>9</sup> While the early versions of the Functional Model also assigned a single planning task to just one planning entity, later versions of the Functional Model do assign some activities to more than one planning entity.

operating conditions, is essential to reliability. During the events that led to the August 2003 blackout, the authority of the various operating entities was, at times, unclear. Shortly after the blackout, each Reliability Coordinator and each entity operating a control area was asked to review the authority of its system operators.<sup>10</sup> The development of the IRO standards formalizes this authority.

Under the NERC Functional Model, the Reliability Coordinator is the functional entity with the highest level of responsibility and authority for real-time reliability of the bulk power system. The Reliability Coordinator is responsible for identifying the subset of System Operating Limits (“SOLs”) that are known as IROs, and may direct its Transmission Operators to take actions associated with IROs. Under the NERC Functional Model, the Transmission Operator is not required to have the tools necessary to identify IROs. Therefore, in assigning a single task to a single functional entity, the Reliability Coordinator is the sole functional entity responsible for developing IROs and for actions to prevent/mitigate instances of exceeding IROs. While the Transmission Operator has no “direct” responsibility for developing IROs, the Transmission Operator may be assigned the task of developing some IROs, monitoring real-time values against identified IROs, and taking actions to prevent reaching an IRO or to mitigate an instance of exceeding an IRO. However, the Transmission Operator only performs these tasks when directed to do so by its Reliability Coordinator. The IRO standards were developed in support of this authority and assignment of tasks. While Reliability Coordinators will assign their Transmission Operators tasks associated with IROs, it is the Reliability Coordinator with ultimate responsibility for these tasks, and it is the Reliability Coordinator that will be sanctioned if these tasks are not performed as required by the standards.

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<sup>10</sup> October 15, 2003 letter from Michael R. Gent, President and CEO of North American Electric Reliability Council to the CEO of all NERC control areas and Reliability Coordinators.

In a similar fashion, the NERC Functional Model assigns responsibility for other SOLs to the Transmission Operator. Again, this is a “shared” responsibility. Where the Transmission Operator has primary responsibility for developing the SOLs within its Transmission Operator Area, the Transmission Operator may request the assistance of its Reliability Coordinator in developing these SOLs. It is the Reliability Coordinator that is held responsible for ensuring that SOLs are developed for its Reliability Coordinator Area in accordance with a methodology developed by the Reliability Coordinator. The Transmission Operator must share its SOLs with its Reliability Coordinator, and the Reliability Coordinator must share any SOLs it develops with its Transmission Operator. The Reliability Coordinator monitors the status of some, but not all, SOLs. The Reliability Coordinator’s visualization tools are not expected to display all SOLs within the Wide-Area that the Reliability Coordinator monitors, as this would be unduly burdensome and duplicative, mixing SOLs that have little impact on the bulk power system with those SOLs that are associated with facilities that are important to the bulk power system. The Reliability Coordinator’s visualization tools are expected to display the real-time status of parameters against all IROs that the Reliability Coordinator monitors and display the subset of SOLs associated with facilities that are most critical to the portions of the bulk power system that are monitored by the Reliability Coordinator.

## **ii. The IRO Standards Coordinate with other Standards**

The Version 0 NERC Reliability Standards included the development of approximately 10-15 standards that, in total, would support reliable planning and operation of the bulk power system. The development of these standards was initiated before the development of the Version 0 Standards, and the intent was to have the set of standards work cooperatively to ensure reliability. No one standard was intended to be implemented by itself. The IRO Standards were

designed to work closely with the “Coordinate Operations” standards, which were also assigned to the Reliability Coordinator, with the “Facilities” standards, and the Personnel (System Operator Training and Certification) standards. Over time, and with the implementation of mandatory and enforceable Reliability Standards, the path to develop the original set of standards has been modified. Most of the other standards originally envisioned in the “set” of 10-15 standards developed to address the reliable planning and operation of the bulk power system have not yet been developed but are included, in part, in the requirements of the Version 0 standards. Thus, the requirements in the IRO Standards work cooperatively with requirements in Version 0 IRO standards. Following are just a few of many examples of this coordination.

The IRO Standards require the Reliability Coordinator to collect the data and information it needs to perform studies to determine if the operations within its Reliability Coordinator Area are likely to result in approaching or exceeding any IROLs. If the studies show that an IROL may be approached or exceeded, the Reliability Coordinator is required to have an action plan to prevent and to mitigate the exceedance so that no IROL is ever exceeded for a time greater than the IROL’s  $T_v$ . The IROL  $T_v$  is defined as follows:

The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit’s  $T_v$  shall be less than or equal to 30 minutes.

The Facility Ratings standards require the Reliability Coordinator to have a methodology for developing IROLs and establishing a  $T_v$  for each of these IROLs, and require the Reliability Coordinator to share the values of its IROLs with other entities. The Training Standard (PER-005-1) requires that the Reliability Coordinator verify that its real-time system operators can perform reliability-related tasks to meet a specified degree of competence. This competence should assure that the Reliability Coordinator’s system operators recognize when to take action,



and make appropriate decisions about what actions to take. The Operating Personnel Credentials standard (PER-003-0) provides a basic level of assurance that the Reliability Coordinator’s real-time system operators have a demonstrated understanding of NERC’s requirements for real-time operations, including the authorities and required interactions of all the operating entities.

**iii. Reliability Coordinators Certified or Capabilities Verified by Reliability Readiness Audit**

The vision in the development of the Version 0 standards included developing standards that would address the certification of Reliability Coordinators, Transmission Operators and Balancing Authorities. The certification requirements included in draft versions of the Version 0 standards were aimed at ensuring that each entity assuming responsibility for one of these functions could demonstrate that it had the tools, procedures, and agreements in place to be capable of assuming the responsibility for that function. Before the Version 0 standards were approved by FERC, the certification requirements were moved into Section 500 and Appendix 5 of the NERC Rules of Procedure,<sup>11</sup> rather than in the form of a standard, and they retain the concept that entities must demonstrate that they have the tools and capabilities necessary to operate as the functional entities for which they are registered. Entities that were already performing the duties of the Reliability Coordinator, Transmission Operator or Balancing Authority were not forced to go through the full organization certification process. Instead, each of these entities underwent a “readiness audit” or “readiness evaluation” to verify that they had the tools and processes in place to operate reliably. An entity that was not operating as a Reliability Coordinator, Transmission Operator, or Balancing Authority at the time NERC was

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<sup>11</sup> See the NERC Rules of Procedure Section 500 – Organization Registration and Certification, and Appendix 5, *Organization Registration and Certification Manual*, Version 3.3 (January 18, 2007), available at [http://www.nerc.com/files/NERC\\_Rules\\_of\\_Procedure\\_EFFECTIVE\\_20091002.pdf](http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20091002.pdf).

certified to be the ERO must undergo the full organization certification process in order to demonstrate its capabilities to perform the assigned reliability function.

Drafting teams continue to assume that the requirements in Reliability Standards apply to entities that have already demonstrated that they have the tools, processes, and agreements in place that are necessary to operate reliably. As new standards are developed and as existing Version 0 standards are revised, the basic capability requirements that were prevalent in the Version 0 standards are being recommended for retirement, provided that appropriate tools, procedures, and facilities, are used in support of an operating entity's daily operations. There is no degradation to reliability as a consequence because these operating entities use the necessary tools, procedures, and facilities on a regular basis to meet performance-based requirements in Reliability Standards. However, if some basic facility requirements, such as those used for communications during emergencies or those monitoring capabilities that a Reliability Coordinator uses to prevent instances of exceeding IROLs, are not used on a routine basis and are not measured through other performance-based requirements, it would not be appropriate to retire these Version 0 requirements.

- iv. The IRO standards identify “what” performance is required without necessarily focusing on the details of “how” to accomplish the required performance.**

Before becoming the ERO, NERC developed Compliance Templates for some of its former Operating Policies and Planning Standards. The drafting team developing these templates noted that the use of passive language and the use of ambiguous language in some of the policies (precursors of the Version 0 Reliability Standards) made the development of Compliance Templates challenging.

This experience highlighted the importance of writing the new standards with a greater degree of clarity, describing only the “required” performance, and using other documents, such as guidelines and job aids, to describe the details of “how” to comply. Where only one way of achieving an objective is possible or only one way of achieving an objective is required, then that way would be included in the requirement, but where more than one way of achieving the objective is possible, the intent was to refrain from specifying “how” to achieve the objective. In this manner, entities will not be required to change existing tools and practices except in those rare instances in which the change will lead to an improvement in reliability. The proposed standards were prepared following this concept. They define the “required” performance but do not identify the details of “how” to achieve that performance. In some instances this may give the appearance, when comparing a set of Version 0 requirements with the requirements in a new standard, of “eliminating” details that were “helpful” to some entities. The IRO drafting team agrees that details are “helpful” but disagrees that these detail are necessary to be included in a Reliability Standard. Rather, Reliability Standards are appropriately focused on the end performance necessary to provide an adequate level of reliability. Accordingly, details useful to the regulated entities and others will be incorporated not into the standards but rather into guidelines that can be employed to support compliance with the Standards.

#### **IV. JUSTIFICATION FOR APPROVAL OF PROPOSED RELIABILITY STANDARDS**

##### **a. Section Overview**

This section summarizes the development of the three proposed IRO Reliability Standards and identifies the associated necessary changes or retirements to other FERC-approved Reliability Standards as discussed in section VI, below. The discussion in this section is also intended to demonstrate that the proposed Reliability Standards meet the criteria for

approval established by FERC. That is, the proposed Reliability Standards are just, reasonable, not unduly discriminatory or preferential and in the public interest.<sup>12</sup>

The standard drafting team roster is provided in **Exhibit C**. The complete development record for the proposed Reliability Standards, including the Implementation Plan referenced in this filing, is available in **Exhibit D**. This extensive development record includes *ten* successive drafts of the Operate within Interconnection Reliability Standards, the Implementation Plan, the ballot pool, and the final ballot results by registered ballot body members, and stakeholder comments received during the development of these Reliability Standards, as well as a discussion regarding how those comments were considered in developing them.

The discussion of each of the three proposed Reliability Standards presented sequentially below is followed by discussion of the various requirements that are recommended for retirement or revision when the new Reliability Standard becomes effective. If a requirement recommended for retirement was addressed in Order No. 693, the directive has been identified, and the work done to meet the directive is described.

### **IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments**

NERC proposes the addition of a new standard, IRO-008-1, to the current suite of FERC-approved Reliability Standards. IRO-008-1 is presented in **Exhibit A** of this filing.

#### **a. Demonstration that the proposed Reliability Standard is just, reasonable, not unduly discriminatory or preferential and in the public interest**

In order to approve a Reliability Standard proposed by the ERO, FERC must determine, after notice and opportunity for public hearing, that the standard is just, reasonable, not unduly discriminatory or preferential and in the public interest.<sup>13</sup> In Order No. 672, FERC identified a number of criteria it will use to analyze Reliability Standards proposed for approval to ensure

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<sup>12</sup> See Order No. 672.

<sup>13</sup> Section 215(d)(2)(A) of the FPA; 18 C.F.R. §39.5.

they are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

Consideration of how the proposed standard IRO-008-1 meets the guidelines identified by FERC in Order No. 672 as necessary to concluding a Reliability Standard meets the statutory criteria follows:

***1. Proposed Reliability Standards must be designed to achieve a specified reliability goal***

*Order No. 672 at P 321. The proposed Reliability Standard must address a reliability concern that falls within the requirements of section 215 of the FPA. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to Cyber security protection.*

IRO-008-1 is designed to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the bulk power system is assessed during the operations horizon.

***2. Proposed Reliability Standards must contain a technically sound method to achieve the goal***

*Order No. 672 at P 324. The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where 13 appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons.*

IRO-008-1 uses analyses and assessments as methods of achieving the stated goal. The standard requires:

- Analysis of the Reliability Coordinator's Wide-Area ahead of time,
- Assessment of the Reliability Coordinator's Wide-Area during real-time, and
- Communication with the entities that need to take specific operational actions based on analyses and assessments.

The term “Wide-Area” is an approved term and includes not only the Reliability Coordinator’s Area, but also critical flow and status information from adjacent Reliability Coordinator Areas as determined by detailed system studies to allow the calculation of IROLs. Upon FERC- approval of the proposed IRO-008-1, the currently-effective IRO-004-1, Requirement R1 should be retired because this requirement only requires a next-day reliability analysis of the Reliability Coordinator’s own Reliability Coordinator Area.

The standard drafting team’s intent in using the term “Wide-Area” in the development of the proposed IRO-008-1 was to ensure that the Reliability Coordinator looks beyond its boundaries into the adjacent Reliability Coordinator Areas to determine if there are activities that it has planned, or that its adjacent Reliability Coordinators have planned, that may bring some facility to approach or exceed an IROL. This may be caused by combinations of forced and scheduled outages, planned interchange transactions, or other activities.

Additionally, the new requirement enhances and works cooperatively with other currently FERC-approved IRO standards. For example, if the Reliability Coordinator conducts an Operational Planning Analysis and notes a possible problem in an adjacent Reliability Coordinator’s Area, even though IRO-008-1 does not require the Reliability Coordinator to notify the other Reliability Coordinator, under IRO-014-1, the Reliability Coordinator that sees any potential operating problem involving another Reliability Coordinator Area is required to notify the adjacent Reliability Coordinator and work cooperatively to resolve the issue. Because the proposed IRO-008-1 requires the Reliability Coordinator to assess a wider area than is currently required by IRO-004-1, the Reliability Coordinator is required to continuously look beyond its own area boundaries and assess a broader portion of the interconnected bulk power system. This gives the Reliability Coordinators a better opportunity to support one another.

The terms “Operational Planning Analysis” and “Real-time Assessment” are new terms with the following definitions:

**Operational Planning Analysis:** An analysis of the expected system conditions for the next day’s operation. (That analysis may be performed either a day ahead or as much as 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, *etc.*).

The definition of Operational Planning Analysis was designed to provide greater specificity regarding the day-ahead study. The language in the predecessor standard, IRO-004-1, was unclear with respect to the need for a “unique” study for each operating day. The use of the term “Operational Planning Analysis” clarifies that, if there were no changes to the expected conditions from one day to the next, the Reliability Coordinator would not be forced to conduct a new analysis of the expected system conditions solely to have documentation for compliance.

The proposed term “Real-time Assessment” is defined as follows:

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

The definition of Real-time Assessment was designed to assure that, under all circumstances, the Reliability Coordinator is required to conduct a real-time assessment, including situations when the Reliability Coordinator is operating without its primary control facilities, by collecting and reviewing available data.

***3. Proposed Reliability Standards must be applicable to users, owners, and operators of the bulk power system, and not others***

Order No. 672 at P 322. *The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others.*

Reliability Standard IRO-008-1 specifically applies to the Reliability Coordinator and no other functional entities.

**4. Proposed Reliability Standards must be clear and unambiguous as to what is required and who is required to comply**

Order No. 672 at P 325. *The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability.*

Each of the requirements in IRO-008-1 is clear in identifying the required performance (what) and the responsible entity (who).

- R1.** Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. *(Violation Risk Factor: Medium)*
- R2.** Each Reliability Coordinator shall perform a Real-Time Assessment at least once every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. *(Violation Risk Factor: High)*
- R3.** When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. *(Violation Risk Factor: Medium)*

**5. Proposed Reliability Standards must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation**

Order No. 672 at P 326. *The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply.*

Each primary requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the ERO Sanction Guidelines. The table below shows the VRFs and VSLs resulting in the indicated range of penalties for violations.



Violation Risk Factors	Violation Severity Levels			
	Lower Range	Moderate Range	High Range	Severe Range
Lower	\$1-3k	\$2-7.5k	\$3-15k	\$5-25k
Moderate	\$2-30k R1	\$4-100k R1 R3	\$6-200k R1	\$10-335k R1 R3
High	\$4-125k R2	\$8-300k R2	\$12-625k R2	\$20-1,000k R2

**6. Proposed Reliability Standards must identify clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner**

Order No. 672 at P 327. *There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner.*

The proposed Reliability Standard identifies clear and objective criteria in the language of the requirements so that that the standards can be enforced in a consistent and non-preferential manner. The language in the requirements is unambiguous with respect to the applicable entity expectations. Each requirement has a single associated measure.

- M1.** The Reliability Coordinator shall have, and make available upon request, the results of its Operational Planning Analyses. (R1)
- M2.** The Reliability Coordinator shall have, and make available upon request, evidence to show it conducted a Real-Time Assessment at least once every 30 minutes. This evidence could include, but is not limited to, dated computer log showing times the assessment was conducted, dated checklists, or other evidence. (R2)
- M3.** The Reliability Coordinator shall have and make available upon request, evidence to confirm that it shared the results of its Operational Planning Analyses or Real-Time Assessments with those entities expected to take actions based on that information. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated transcripts of voice records, dated facsimiles, or other evidence. (R3)

The measures require the Reliability Coordinator to have evidence for each of the three requirements. The measures are clear in stating that the Reliability Coordinator must have

evidence of day-ahead analyses, evidence of Real-time Assessments, and evidence of communicating information under specific conditions. The measures provide samples of what constitutes acceptable evidence and allow for other types of evidence. The measures are written so that the Reliability Coordinator is required to conduct the Real-time Assessment even if its energy management system is not operational. The definition of Real-time Assessment was written to allow the assessment to be conducted either through the energy management system or manually. The measures are specific in asking only for a demonstration that that system was analyzed and assessed. The requirements and associated measures are designed to allow the Reliability Coordinator the ability to perform a level of analysis applicable to the actual situation, focusing on the “situational awareness” aspect of the requirement.

***7. Proposed Reliability Standards should achieve a reliability goal effectively and efficiently, but do not necessarily have to reflect “best practices” without regard to implementation cost***

*Order No. 672 at P 328. The proposed Reliability Standard does not necessarily have to reflect the optimal method, or “best practice,” for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently.*

The proposed Reliability Standard achieves its reliability goal effectively and efficiently, not necessarily reflecting “best practices” without regard to implementation costs. Reliability Coordinators must have tools to conduct analyses and assessments. This standard requires that the Reliability Coordinator perform an Operational Planning Analysis of its Wide-Area, and thus requires modeling beyond that currently required for Reliability Coordinator certification,<sup>14</sup> as well as beyond what is required to comply with the requirements of IRO-004. The proposed standard supports the implementation of the Reliability Coordinator function as described in the Functional Model. The Functional Model identifies the Reliability Coordinator as the

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<sup>14</sup> The certification requirements for the Reliability Coordinator only require that the Reliability Coordinator have a view of the Reliability Coordinator Area and facilities of other Reliability Coordinators that may have IROs.

operational entity with a “Wide-Area” view – and to implement this Wide-Area view modeling beyond the Reliability Coordinator’s own Reliability Coordinator Area is required. Without a “Wide-Area” view, the Reliability Coordinator cannot determine IROLs appropriately.

The standard has requirements to achieve the purpose – preventing instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection – by ensuring that the bulk power system is assessed during two specific time periods within the operations horizon. The 30-minute time period was selected to establish a reasonable assessment frequency. This limits the amount of risk to the bulk power system. The 30-minute interval is consistent with the Disturbance Control Standard’s requirements and the maximum time (IROL  $T_v$ ) for resolving an instance of exceeding an IROL. The day-ahead time period was selected to identify any potential issues in a time frame where actions could be taken proactively.

**8. *Proposed Reliability Standards cannot be “lowest common denominator,” i.e., cannot reflect a compromise that does not adequately protect bulk power system reliability***

*Order No. 672 at P 330. A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a “lowest common denominator” Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.*

The standard does not aim at “lowest common denominator.” The requirements are independent of any particular Reliability Coordinator’s situation. The proposed IRO-008-1 Requirement R1 requires a broader model and view than is currently required under IRO-004-1. There is no existing requirement to conduct a Real-time Assessment, thus IRO-008-1 Requirement R2 is requiring something that does not currently exist in any current FERC-approved Reliability Standard, thereby raising the threshold for reliability performance.

**9. Proposed Reliability Standards may consider costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability**

Order No. 672 at P 330. *A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a “lowest common denominator” Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.*

The proposed Reliability Standards do not reflect any differentiation in requirements based on size. There are no small Reliability Coordinators.

**10. Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one area or approach**

Order No. 672 at P 331. *A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.*

The requirements in this standard apply throughout North America, with no exceptions.

**11. Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid**

Order No. 672 at P 332. *As directed by section 215 of the FPA, the Commission itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another.*

The requirements in the standard support competition by assuring that the system is analyzed and assessed, with a goal of keeping the transmission system available and stable.

**12. The implementation time for the proposed Reliability Standards must be reasonable**

Order No. 672 at P 333. *In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.*

The Implementation Plan (see **Exhibit C**) does not allow a lengthy time period for entities to become fully compliant. This standard assumes that the Reliability Coordinator currently has the tools to meet the performance in the requirements, and no new tools are needed. The three-month implementation period will allow entities to develop internal procedures to support collection of evidence needed for the measures.

**13. The Reliability Standard development process must be open and fair**

Order No. 672 at P 334. *Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by the Commission.*

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which was incorporated into the Rules of Procedure as Appendix 3A. In its ERO Certification Order, FERC found that NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards. The development process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders and a vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard for submission to FERC. The drafting team developed this

standard by following the *Reliability Standards Development Procedure*, without exception. In this case, the process has been extensive, with nine draft versions of the standards prepared before the proposed Reliability Standards presented in this filing were developed. The standard was publicly posted for five different comment periods, and the standard drafting team responded to every comment submitted during each of these comment periods. With each posting, the commenters were advised that there is an appeals process, and no stakeholder has asked for an appeal.

***14. Proposed Reliability Standards must balance with other vital public interests***

Order No. 672 at P 335. *Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard.*

The standard does not conflict with any vital public interests. Compliance with this standard supports preventing instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection.

***15. Proposed Reliability Standard must not conflict with prior FERC Rules or Orders.***

Order No. 672 at P.444. *a potential conflict between a Reliability Standard under development and a Transmission Organization function, rule, order, tariff, rate schedule, or agreement accepted, approved, or ordered by the Commission should be identified and addressed during the ERO's Reliability Standard Development Process.*

During the January 2, 2007 to February 15, 2007 public comment period, stakeholders were asked to identify any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement – and all stakeholders who responded to the question indicated there were no identified conflicts.

#### ***16. Proposed Reliability Standards must consider any other relevant factors***

*Order No. 672 at P 323. In considering whether a proposed Reliability Standard is just and reasonable, we will consider the following general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed.*

*Order No. 672 at P 337. In applying the legal standard to review of a proposed Reliability Standard, the Commission will consider the general factors above. The ERO should explain in its application for approval of a proposed Reliability Standard how well the proposal meets these factors and explain how the Reliability Standard balances conflicting factors, if any. The Commission may consider any other factors it deems appropriate for determining if the proposed Reliability Standard is just and reasonable, not unduly discriminatory or preferential, and in the public interest. The ERO applicant may, if it chooses, propose other such general factors in its ERO application and may propose additional specific factors for consideration with a particular proposed Reliability Standard.*

No other factors for FERC's consideration were identified in the development of these proposed Reliability Standards.

#### **IRO-009-1 — Reliability Coordinator Actions to Operate Within IROLs**

NERC proposes the addition of a new Reliability Standard, IRO-009-1 to the current suite of FERC-approved Reliability Standards. IRO-009-1 is presented in **Exhibit A** of this filing.

##### **a. Demonstration that the proposed reliability standard is just, reasonable, not unduly discriminatory or preferential and in the public interest**

In order to approve a Reliability Standard proposed by the ERO, FERC must determine, after notice and opportunity for public hearing, that the standard is just, reasonable, not unduly discriminatory or preferential and in the public interest.<sup>15</sup> In Order No. 672, FERC identified a number of criteria it will use to analyze Reliability Standards proposed for approval to ensure they are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

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<sup>15</sup> Section 215(d)(2)(A) of the FPA; 18 C.F.R. §39.5.

Discussion regarding how the proposed IRO-009-1 standard meets the guidelines identified by FERC in Order No. 672 as necessary to concluding a Reliability Standard meets the statutory criteria follows.

***1. Proposed Reliability Standards must be designed to achieve a specified reliability goal***

*Order No. 672 at P 321. The proposed Reliability Standard must address a reliability concern that falls within the requirements of section 215 of the FPA. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to Cyber security protection.*

IRO-009-1 is designed to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by mandating that action plans be developed and implemented to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection.

***2. Proposed Reliability Standards must contain a technically sound method to achieve the goal***

*Order No. 672 at P 324. The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where 13 appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons.*

Requirements R1 through R4 use advance planning as a method for preparing the Reliability Coordinator to take preventive and corrective actions relative to instances of approaching or exceeding IROLs. Technically, having advance plans in place to use under specific conditions provides a greater likelihood of appropriate action if the studied conditions occur. The fifth requirement (R5) of the proposed IRO-009-1 standard uses a dispute resolution



process as a method of bringing closure when involved Reliability Coordinators cannot agree on the correct value of an IROL or IROL  $T_v$ . The dispute resolution process requires all involved Reliability Coordinators to use the more conservative of the IROL values because this minimizes the risk to the grid until the issue is resolved.

**3. Proposed Reliability Standards must be applicable to users, owners, and operators of the bulk power system, and not others**

Order No. 672 at P 322. *The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others.*

Reliability Standard IRO-009-1 applies to the Reliability Coordinator and no other functional entities.

**4. Proposed Reliability Standards must be clear and unambiguous as to what is required and who is required to comply**

Order No. 672 at P 325. *The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability.*

Each of the requirements is clear in identifying the required performance (what) and the responsible entity (who).

- R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*)
- R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*)
- R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. (*Violation Risk Factor: High*)

- R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL’s T<sub>v</sub>. (*Violation Risk Factor: High* )
- R5.** If unanimity cannot be reached on the value for an IROL or its T<sub>v</sub>, each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration. (*Violation Risk Factor: High*)

**5. Proposed Reliability Standards must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation**

Order No. 672 at P 326. *The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply.*

Each primary requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the ERO Sanction Guidelines. The table below shows the VRFs and VSLs, resulting in the indicated range of penalties for violations.

Violation Risk Factors	Violation Severity Levels			
	Lower Range	Moderate Range	High Range	Severe Range
Lower	\$1-3k	\$2-7.5k	\$3-15k	\$5-25k
Moderate	\$2-30k	\$4-100k	\$6-200k	\$10-335k R1 R2
High	\$4-125k	\$8-300k	\$12-625k R4	\$20-1,000k R3 R4 R5

**6. Proposed Reliability Standards must identify clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner**

Order No. 672 at P 327. *There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner.*

Each requirement of IRO-009-1 has a single associated measure. Some measures address more than one requirement. The measures require the Reliability Coordinator to have evidence for each of the five requirements.

- M1.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement R1 and Requirement R2. This evidence shall include a list of any IROLs (and each associated  $T_v$ ) identified in advance, along with one or more dated Operating Processes, Procedures, or Plans that that will be used. (R1 and R2)
- M2.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it acted or directed others to act in accordance with Requirement R3 and Requirement R4. This evidence could include, but is not limited to, Operating Processes, Procedures, or Plans from Requirement R1, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence. (R3 and R4)
- M3.** For a situation where Reliability Coordinators disagree on the value of an IROL or its  $T_v$  the Reliability Coordinator shall have, and make available upon request, evidence to confirm that it used the most conservative of the values under consideration, without delay. Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence. (R5)

The measures for the first two requirements are very specific, requiring a list of IROLs and the associated action plans (called Operating Processes, Procedures, or Plans). The measures for the other requirements provide examples of what constitutes acceptable evidence, and they allow for other evidence.

**7. Proposed Reliability Standards should achieve a reliability goal effectively and efficiently — but do not necessarily have to reflect “best practices” without regard to implementation cost**

Order No. 672 at P 328. *The proposed Reliability Standard does not necessarily have to reflect the optimal method, or “best practice,” for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently.*

The Reliability Standard has requirements to achieve the purpose – to mandate actions intended to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection. The actions required in the standard do not require any new capital investments in facilities. The only significant implementation costs are those associated with human labor.

**8. Proposed Reliability Standards cannot be “lowest common denominator,” i.e., cannot reflect a compromise that does not adequately protect bulk power system reliability**

Order No. 672 at P 330. *A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a “lowest common denominator” Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.*

The Reliability Standard does not aim at a “lowest common denominator.” The requirements apply equally to all Reliability Coordinators without regard to differences in any Reliability Coordinator’s tools, size of Reliability Coordinator Area, or any other factors. Each requirement is written to specify that the required performance is on a “per IROL” basis, not in performance with IROLs “in general.” The drafting team assumed that any entity operating as a Reliability Coordinator has the training, tools, and authorities needed to calculate IROLs and associated IROL  $T_{vs}$ , to conduct analyses and assessments, to communicate with other operating entities, and to develop and implement action plans to either prevent or mitigate instances of exceeding IROLs.

**9. Proposed Reliability Standards may consider costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability**

Order No. 672 at P 330. *A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a “lowest common denominator” Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.*

The proposed Reliability Standards do not reflect any differentiation in requirements based on size. There are no small Reliability Coordinators.

**10. Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one area or approach**

Order No. 672 at P 331. *A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System; to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.*

The requirements in this Reliability Standard apply throughout North America, with no exceptions.

**11. Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid**

Order No. 672 at P 332. *As directed by section 215 of the FPA, the Commission itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another.*

The requirements in the Reliability Standard support competition by assuring that the system is analyzed and assessed, with a goal of keeping the transmission system available and stable.

**12. *The implementation time for the proposed Reliability Standards must be reasonable***

Order No. 672 at P 333. *In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.*

The Implementation Plan (see **Exhibit D**) does not allow a long time period for entities to become fully compliant. This standard assumes that the Reliability Coordinator currently has the tools to meet the performance in the requirements, and no new tools are needed. The three-month implementation period will allow entities adequate time to develop internal procedures to support collection of evidence needed to implement the measures.

**13. *The Reliability Standard Development Process must be open and fair***

Order No. 672 at P 334. *Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by the Commission.*

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which was incorporated into the Rules of Procedure as Appendix 3A. In its ERO Certification Order, FERC found that NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards. The Development Process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments

of all stakeholders and a vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard for submission to FERC. The drafting team developed this standard by following the Reliability Standards Development Process, without exception. In this case, the process has been extensive, with nine draft versions of the standards prepared before the proposed standards presented in this filing were developed. The standard was publicly posted for five different comment periods, and the standard drafting team responded to every comment submitted during each of these comment periods. With each posting, the commenters were advised that there is an appeals process, and no stakeholder has asked for an appeal.

***14. Proposed Reliability Standards must balance with other vital public interests***

Order No. 672 at P 335. *Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard.*

The Reliability Standard does not conflict with any vital public interests. Compliance with this standard supports preventing instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection.

***15. Proposed Reliability Standards must not conflict with prior FERC Rules or Orders***

Order No. 672 at P.444. *a potential conflict between a Reliability Standard under development and a Transmission Organization function, rule, order, tariff, rate schedule, or agreement accepted, approved, or ordered by the Commission should be identified and addressed during the ERO's Reliability Standard Development Process.*

During the January 2, 2007 to February 15, 2007 public comment period, stakeholders were asked to identify any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement. All stakeholders who responded to the question indicated there were no identified conflicts.

## ***16. Proposed Reliability Standards must consider any other relevant factors***

Order No. 672 at P 323. *In considering whether a proposed Reliability Standard is just and reasonable, we will consider the following general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed.*

Order No. 672 at P 337. *In applying the legal standard to review of a proposed Reliability Standard, the Commission will consider the general factors above. The ERO should explain in its application for approval of a proposed Reliability Standard how well the proposal meets these factors and explain how the Reliability Standard balances conflicting factors, if any. The Commission may consider any other factors it deems appropriate for determining if the proposed Reliability Standard is just and reasonable, not unduly discriminatory or preferential, and in the public interest. The ERO applicant may, if it chooses, propose other such general factors in its ERO application and may propose additional specific factors for consideration with a particular proposed Reliability Standard.*

No other factors for FERC's consideration were identified in the development of these proposed standards.

### **IRO-010-1a — Reliability Coordinator Data Specification and Collection**

NERC proposes the addition of a new Reliability Standard, IRO-010-1a to the current suite of FERC-approved Reliability Standards. IRO-010-1a is presented in **Exhibit A** of this filing.

#### **a. Demonstration that the proposed Reliability Standard is just, reasonable, not unduly discriminatory or preferential and in the public interest**

In order to approve a Reliability Standard proposed by the ERO, FERC must determine, after notice and opportunity for public hearing, that the standard is just, reasonable, not unduly discriminatory or preferential and in the public interest.<sup>16</sup> In Order No. 672, FERC identified a number of criteria it will use to analyze Reliability Standards proposed for approval to ensure they are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

The consideration of how the proposed standard IRO-010-1a meets the guidelines identified by

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<sup>16</sup> Section 215(d)(2)(A) of the FPA; 18 C.F.R. §39.5.



FERC in Order No. 672 as necessary to concluding a Reliability Standard meets the statutory criteria follows.

***1. Proposed Reliability Standards must be designed to achieve a specified reliability goal***

*Order No. 672 at P 321. The proposed Reliability Standard must address a reliability concern that falls within the requirements of section 215 of the FPA. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to Cyber security protection.*

IRO-010-1a is designed to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by mandating that the Reliability Coordinator have the data it needs to monitor and assess the operation of its Reliability Coordinator Area.

***2. Proposed Reliability Standards must contain a technically sound method to achieve the goal***

*Order No. 672 at P 324. The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where 13 appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons.*

The requirements in the standard specify a formal request as the method for the Reliability Coordinator to explicitly identify the data and information it needs for reliability; and require the entities with the data to provide it as requested. This method is sound because the Reliability Coordinator is the only entity that knows what data it needs to properly perform its reliability tasks, and the most efficient format for accepting this data. The requirements were written so that the Reliability Coordinator must cooperate with the entities that provide data, so that the format specified is acceptable to both parties. The purpose is to assure that there are

checks and balances protecting the entity that needs the data as well as the entities that must provide the data.

**3. *Proposed Reliability Standards must be applicable to users, owners, and operators of the bulk power system, and not others***

Order No. 672 at P 322. *The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others.*

The Reliability Standard applies to the Reliability Coordinator and to the other functional entities that must supply data to the Reliability Coordinator. This includes entities that have been identified as owners, users, or operators of the bulk-power system. The requirements in the standard are specifically applicable to the following functional entities:

- Reliability Coordinator
- Balancing Authority
- Generator Owner
- Generator Operator
- Interchange Authority
- Load-Serving Entity
- Transmission Operator
- Transmission Owner

**4. *Proposed Reliability Standards must be clear and unambiguous as to what is required and who is required to comply***

Order No. 672 at P 325. *The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability.*

Each of the requirements clearly identifies the required performance (what) and the responsible entity (who).

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following: *(Violation Risk Factor: Low)*

**R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

- R1.2.** Mutually agreeable format.
- R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
- R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.
- R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. *(Violation Risk Factor: Low)*
- R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. *(Violation Risk Factor: Medium)*

**5. Proposed Reliability Standards must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation**

Order No. 672 at P 326. *The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply.*

Each primary requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the ERO Sanction Guidelines. The table below shows the VRFs and VSLs, resulting in the indicated range of penalties for violations.

Violation Risk Factors	Violation Severity Levels			
	Lower Range	Moderate Range	High Range	Severe Range
Lower	\$1-3k R1 R2	\$2-7.5k R1 R2	\$3-15k R1 R2	\$5-25k R1 R2
Moderate	\$2-30k R3	\$4-100k R3	\$6-200k R3	\$10-335k R3
High	\$4-125k	\$8-300k	\$12-625k	\$20-1,000k

**6. Proposed Reliability Standards must identify clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner**

Order No. 672 at P 327. *There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner.*

Each requirement has a single associated measure. There are three measures that are clear and objective – requiring the actual specification, requiring evidence that the specification was distributed, and requiring evidence that data and information was provided. The measure for Requirement R1 requires the Reliability Coordinator to have its specification available as evidence. Measures for Requirements R2 and R3 provide examples of what constitutes acceptable evidence and allow for other evidence.

- M1.** The Reliability Coordinator shall have, and make available upon request, a documented data specification that contains all elements identified in Requirement R1. (R1)
- M2.** The Reliability Coordinator shall have, and make available upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. This evidence could include, but is not limited to, dated paper or electronic notice used to distribute its data specification showing recipient, and data or information requested or other equivalent evidence. (R2)
- M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and make available upon request, evidence to confirm that it provided data and information, as specified in Requirement R3. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated computer printouts, dated SCADA data, or other equivalent evidence. (R3)

**7. Proposed Reliability Standards should achieve a reliability goal effectively and efficiently - but do not necessarily have to reflect “best practices” without regard to implementation cost**

Order No. 672 at P 328. *The proposed Reliability Standard does not necessarily have to reflect the optimal method, or “best practice,” for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently.*

As written, Requirement R1 supports Reliability Coordinator data and information specifications that include items to support advanced applications (for instance) that may currently be used by some, but not all, Reliability Coordinators. Auditors are limited in assessing compliance based on what is stated in the requirement. On that basis, if the standard included a list of 10 items for inclusion in the data specification, then the auditor would be limited in looking just for those 10 items. As written, Requirement R1 does not include such limitations. Requirement R1 includes checks and balances aimed at assuring that the data and information identified in the specification is limited to what is needed for reliability. By specifying that the format must be mutually agreeable, the standard supports efficiency by precluding the submission of data that is in a format that cannot be used. Similarly, the requirement limits the data and information that can be requested to data and information needed for Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. In addition, the requirement includes preparation for loss of automated data, so that there is a plan in place for providing data in advance of actual need.

**8. *Proposed Reliability Standards cannot be “lowest common denominator,” i.e., cannot reflect a compromise that does not adequately protect bulk power system reliability***

*Order No. 672 at P 330. A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a “lowest common denominator” Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.*

The Reliability Standard does not aim at “lowest common denominator.” The requirements are based on each Reliability Coordinator developing its own specification, distributing that specification, and then receiving data needed from other entities. Because the standard is based on having each Reliability Coordinator develop its own data specification, the

standard does not attempt to identify the minimum list of data that would be needed by every Reliability Coordinator. To do so would be establishing the “lowest common denominator,” in contradiction of FERC’s directives.

**9. *Proposed Reliability Standards may consider costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability***

*Order No. 672 at P 330. A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a “lowest common denominator” Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.*

The proposed Reliability Standard requirements do not differentiate in applicability based on size. There are no small Reliability Coordinators. Entities are already providing one another with data and information today. This standard does not require the installation of any new equipment.

**10. *Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one area or approach***

*Order No. 672 at P 331. A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.*

The requirements in this Reliability Standard apply throughout North America, with no exceptions.

**11. Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid**

Order No. 672 at P 332. *As directed by section 215 of the FPA, the Commission itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another.*

The requirements in the Reliability Standard support competition by assuring that the Reliability Coordinator has the data and information it needs to monitor and assess the system, with a goal of keeping the bulk power system stable and available.

**12. The implementation time for the proposed Reliability Standards must be reasonable**

Order No. 672 at P 333. *In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.*

The Implementation Plan (*see Exhibit D*) does not allow a long time period for entities to become fully compliant. This standard assumes that the Reliability Coordinator currently has the tools to meet the performance in the requirements, and no new tools are needed. The three month implementation period will allow entities the time necessary to develop internal procedures to support collection of evidence needed to ensure compliance with the measures.

**13. The Reliability Standard Development Process must be open and fair**

Order No. 672 at P 334. *Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard Development Process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard Development Process if it is conducted in good faith in accordance with the procedures approved by the Commission.*

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which was incorporated into the Rules of Procedure as Appendix 3A. In its ERO Certification Order, FERC found that NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards. The Development Process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders and a vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard for submission to FERC. The drafting team developed this standard by following the Reliability Standards Development Process, without exception. In this case, the process has been extensive, with nine draft versions of the standards prepared before the proposed standards presented in this filing were developed. The standard was publicly posted for five different comment periods, and the standard drafting team responded to every comment submitted during each of these comment periods. With each posting, the commenters were advised that there is an appeals process, and no stakeholder has asked for an appeal.

***14. Proposed Reliability Standards must balance with other vital public interests***

Order No. 672 at P 335. *Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard.*

The Reliability Standard does not conflict with any vital public interests. Compliance with this standard supports preventing instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection.



***15. Reliability Standard does not conflict with prior FERC Orders, tariffs, etc***

Order No. 672 at P.444. *...a potential conflict between a Reliability Standard under development and a Transmission Organization function, rule, order, tariff, rate schedule, or agreement accepted, approved, or ordered by the Commission should be identified and addressed during the ERO's Reliability Standard Development Process.*

During the January 2, 2007 to February 15, 2007 public comment period, stakeholders were asked to identify any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement. All stakeholders who responded to the question indicated there were no identified conflicts.

***Proposed Reliability Standards must consider any other relevant factors***

Order No. 672 at P 323. *In considering whether a proposed Reliability Standard is just and reasonable, we will consider the following general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed.*

Order No. 672 at P 337. *In applying the legal standard to review of a proposed Reliability Standard, the Commission will consider the general factors above. The ERO should explain in its application for approval of a proposed Reliability Standard how well the proposal meets these factors and explain how the Reliability Standard balances conflicting factors, if any. The Commission may consider any other factors it deems appropriate for determining if the proposed Reliability Standard is just and reasonable, not unduly discriminatory or preferential, and in the public interest. The ERO applicant may, if it chooses, propose other such general factors in its ERO application and may propose additional specific factors for consideration with a particular proposed Reliability Standard.*

No other factors for FERC's consideration were identified in the development of these proposed standards.

**b. Violation Risk Factor and Violation Severity Level Assignments**

The proposed Reliability Standards include VRFs and VSLs. The ranges of penalties for violations are based on the applicable VRF and VSLs and will be administered based on the Sanctions table and supporting penalty determination process described in the FERC-approved NERC Sanction Guidelines, included as Appendix 4B in NERC's Rules of Procedure. Each primary requirement is assigned a VRF and a VSL. These elements support the determination of

an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the ERO Sanction Guidelines.

### **Assignment of Violation Risk Factors**

The IRO Standard Drafting Team applied the following criteria when proposing VRFs for the requirements in IRO-008-1, IRO-009-1 and IRO-010-1a:

#### ***High Risk Requirement***

A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

#### ***Medium Risk Requirement***

A requirement that, if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. However, violation of a medium risk requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

#### ***Lower Risk Requirement***

A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. A planning requirement that is administrative in nature.

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<sup>17</sup> These three levels of risk are defined by NERC and recognized by FERC in the May 18, 2007 Order at P9, and the November 16, 2007 Order at Appendix A.

The team also considered consistency with the FERC Violation Risk Factor Guidelines for setting VRFs:<sup>18</sup>

**Guideline (1) — Consistency with the Conclusions of the Final Blackout Report**

The Commission seeks to ensure that Violation Risk Factors assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System.

In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:<sup>19</sup>

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

**Guideline (2) — Consistency within a Reliability Standard<sup>20</sup>**

The Commission expects a rational connection between the sub-Requirement Violation Risk Factor assignments and the main Requirement Violation Risk Factor assignment.

**Guideline (3) — Consistency among Reliability Standards**

The Commission expects the assignment of Violation Risk Factors corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

**Guideline (4) — Consistency with NERC’s Definition of the Violation Risk Factor Level**

Guideline (4) was developed to evaluate whether the assignment of a particular Violation Risk Factor level conforms to NERC’s definition of that risk level.

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<sup>18</sup> North American Electric Reliability Corp., 119 FERC ¶ 61,145, order on reh’g and compliance filing, 120 FERC ¶ 61,145 (2007) (“VRF Rehearing Order”).

<sup>19</sup> *Id.* at n. 15.

<sup>20</sup> Of the three new standards proposed for approval, only IRO-010-1a has sub-requirements and the “roll up” approach was used such that the drafting team proposed a single set of VSLs for the requirement “in total.” Thus, this guideline is not applicable to the three new proposed standards.

**Guideline (5) — Treatment of Requirements that Co-mingle More Than One Obligation**

Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

The following discussion addresses how the drafting team considered FERC’s VSL Guidelines 2 through 5. The team did not address Guideline 1 directly because of an apparent conflict between Guidelines 1 and 4. Whereas Guideline 1 identifies a list of topics that encompass nearly all topics within NERC’s Reliability Standards and implies that these requirements should be assigned a “High” VRF, Guideline 4 directs assignment of VRFs based on the impact of a specific requirement to the reliability of the system. The team believes that Guideline 4 is reflective of the intent of VRFs in the first instance and therefore concentrated its approach on the reliability impact of the requirements.

There are three requirements in IRO-008-1:

- R1.** Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2.** Each Reliability Coordinator shall perform a Real-Time Assessment at least once every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3.** When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

Of the three requirements, Requirement R1 and R3 were assigned a “Medium” VRF, and Requirement R2 was assigned a “High” VRF.

- **VRF for IRO-008-1, Requirement R1:**
  - FERC’s Guideline 2 — Consistency within a Reliability Standard. The requirement has no subrequirements so only one VRF was assigned. Therefore, there is no conflict.
  - FERC’s Guideline 3 — Consistency among Reliability Standards. There is a similar requirement (Requirement R1) in IRO-004-1 that is assigned a High VRF. The VRF assigned to IRO-008 Requirement R1 is lower than IRO-004-1 R1. The drafting team recognizes that the VRF for IRO-008-1 Requirement R1 is lower than the VRF for the similar requirement IRO-004-1 which is assigned a High VRF, however the IRO drafting team and stakeholders support the Medium VRF based on NERC’s criteria for VRFs. The assignment of the Medium VRF was made based on the premise that failure to have a single Operational Planning Analysis, by itself, would not directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures. For a requirement to be assigned a “High” VRF, there should be the expectation that failure to meet the required performance “will” result in instability, separation, or cascading failures. This is not the case when a Reliability Coordinator fails to conduct a single Operational Planning Analysis. While the drafting team agrees that, under some circumstances, it is possible that a failure to have a single Operational Planning Analysis may put the Reliability Coordinator in a position where it is not as prepared as it should be to address the operating day, the failure to have a new Operational Planning Analysis would not, by itself, result in instability, separation, or cascading failures. If the Reliability Coordinator failed to conduct an Operational Planning Analysis, it would still be expected to perform Real-time Assessments at least every 30 minutes. The results of these analyses should provide the Reliability Coordinator’s competent system operators with information needed to prevent and/or mitigate instances of exceeding IROLs. The NERC Uniform Compliance Monitoring and Enforcement Program and the Sanctions Guidelines give the Compliance Enforcement Authority the right to provide a higher sanction for failure to meet multiple requirements. And if the Reliability Coordinator failed to have an Operational Planning Analysis and also failed to conduct Real-time Assessments, or if the Reliability Coordinator failed to have an Operational Planning Analysis and also failed to have system operators who were competent in analyzing real-time operating issues, the expectation is that the sanction for noncompliance would be higher than for the failure to conduct a single Operational Planning Analysis with no other violations.
  - FERC’s Guideline 4 — Consistency with NERC’s Definition of a VRF. Failure to perform an analysis for the “next day” could directly affect the electrical state or the capability of the bulk electric system, and could affect the Reliability Coordinator’s ability to effectively monitor and control the bulk electric system. However, violation of this requirement is unlikely to lead to bulk power system instability, separation, or cascading failures. Because the Reliability Coordinator is also required (under IRO-008-1, Requirement R2) to conduct a real-time assessment every thirty minutes, if there is an instance of approaching or exceeding an IROL, the Reliability Coordinator’s system operators are required to

have the competence (under PER-005-1, Requirement R2) to react to changing system conditions and would be expected to take actions to prevent instability, separation, or cascading failure. Thus, this requirement meets NERC's criteria for a Medium VRF. Failure to have an analysis of the next day will not, by itself, lead to instability, separation, or cascading failures.

- FERC's Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-008-1 Requirement R1 contains only one objective, therefore only one VRF was assigned.
  
- **VRF for IRO-008-1, Requirement R2:**
  - FERC's Guideline 2 — Consistency within a Reliability Standard. The requirement has no subrequirements; only one VRF was assigned so there is no conflict.
  - FERC's Guideline 3 — Consistency among Reliability Standards. IRO-008-1 Requirement R2 is a new requirement, so there are no comparable requirements with which to compare VRFs.
  - FERC's Guideline 4 — Consistency with NERC's Definition of a VRF. Failure to perform a Real-time Assessment can have an adverse impact on the bulk electric system because IROLs could be approached or exceeded without the Reliability Coordinator knowing in time to take action before instability, separation, or cascading failures occur. This meets NERC's criteria for a High VRF.
  - FERC's Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-008-1, Requirement R2 contains only one objective, therefore only one VRF was assigned.
  
- **VRF for IRO-008-1, Requirement R3:**
  - FERC's Guideline 2 — Consistency within a Reliability Standard. The requirement has no subrequirements; only one VRF was assigned so there is no conflict.
  - FERC's Guideline 3 — Consistency among Reliability Standards. IRO-004-1 Requirement R5 includes actions similar to those required in IRO-008-1, Requirement R3. The VRF for IRO-004-1, Requirement R5 is "High." The drafting team recognizes that the VRF for IRO-008-1 Requirement R3 is lower than the VRF for the similar requirement IRO-004-1 which is assigned a High VRF; however, the IRO drafting team and stakeholders support the Medium VRF based on NERC's criteria for VSLs. IRO-008-1 Requirement R3 requires the Reliability Coordinator to share the results of its analyses with entities that are expected to take actions to prevent or mitigate instances of exceeding an IROL.
  - The assignment of the "Medium" VRF was made based on the premise that failure to share this information, by itself, would not directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures. For a requirement to be assigned a "High" VRF, there should be the expectation

that failure to meet the required performance “will” result in instability, separation, or cascading failures. This is not the case when a Reliability Coordinator fails to share the results of its analyses. While the drafting team agrees that if the Reliability Coordinator fails to share the results of its analyses, this failure will put other entities in a position where they are not as prepared as they should be to address instances of preventing or exceeding IROLs. However, even if the Reliability Coordinator failed to share this information in advance, the Reliability Coordinator is still required, under IRO-009-1, Requirements R1 through R4 to have action plans for preventing and mitigating instances of exceeding IROLs and for implementing action plans to prevent or mitigate exceeding each IROL within IROL  $T_v$ . If IRO-009-1, Requirements R1 through R4 are met, then the failure to meet IRO-008-1, Requirement R3 should not result in instability, separation, or cascading failures. The NERC Uniform Compliance Monitoring and Enforcement Program and the Sanctions Guidelines give the Compliance Enforcement Authority the right to provide a higher sanction for failure to meet multiple requirements – and if the Reliability Coordinator failed to share the results of its analyses and also failed to direct actions to prevent or mitigate exceeding an IROL within its IROL  $T_v$ , the expectation is that the sanction for noncompliance would be higher than for the failure to share the results of analyses with no other violations.

- FERC’s Guideline 4 — Consistency with NERC’s Definition of a VRF. Failure to share the results of its analyses or assessments will impact the situational awareness of the operating entities involved, and thus could affect the Transmission Operator’s or Balancing Authority’s ability to effectively monitor and control the BES, however violation of this requirement is unlikely to lead to BES instability, separation or cascading failures. Because the Reliability Coordinator is required to have and implement action plans to mitigate and prevent instances of exceeding each identified IROL (IRO-009-1 Requirements R1 and R2) and the Reliability Coordinator is required to either implement an action plan or direct actions (IRO-009-1 Requirements R3 and R4), the impact of not sharing the analyses and assessments should not result in instability, separation, or cascading failures. Thus, this requirement meets the criteria for a Medium VRF.
- FERC’s Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-008-1, Requirement R3 contains only one objective, therefore only one VRF was assigned.

There are five requirements in IRO-009-1:

- R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)

- R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R5.** If unanimity cannot be reached on the value for an IROL or its  $T_v$ , each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

Of the five requirements, the Requirements R1 and R2 were assigned a “Medium” VRF, and Requirements R3 through R5 were assigned a “High” VRF.

- **VRFs for IRO-009-1, Requirements R1 and R2:**
  - FERC’s Guideline 2 — Consistency within a Reliability Standard. The requirements have no subrequirements; only one VRF was assigned to each requirement so there is no conflict.
  - FERC’s Guideline 3 — Consistency among Reliability Standards. IRO-004-1, Requirement R3 includes actions similar to those required in IRO-009-1, Requirements R1 and R2. The VRF for IRO-004-1, Requirement R3 is High. The drafting team recognizes that the VRFs for IRO-009-1 Requirements R1 and R2 are lower than the VRF for the similar requirement IRO-004-1 which is assigned a High VRF, however the IRO drafting team and stakeholders support the Medium VRFs based on NERC’s criteria for VSLs.
  - Action plans are based on a set of assumptions, and often these assumptions do not match the real-time conditions — that is, the further ahead the action plans are developed, the less likely the set of assumptions will match the real-time conditions. System operators are required to be trained and competent to develop and modify action plans in real-time to meet actual operating conditions. The



assignment of the Medium VRF was made based on the premise that failure to develop an action plan (for an IROL identified at least a day ahead of the operating day), by itself, would not directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures. For a requirement to be assigned a “High” VRF, there should be the expectation that failure to meet the required performance “will” result in instability, separation, or cascading failures. This is not the case when a Reliability Coordinator fails to develop an action plan for an IROL that is identified more than a day ahead. While the drafting team agrees that if the Reliability Coordinator fails to develop an action plan, this failure will put its system operators in a position where they are not as prepared as they should be to address instances of preventing or mitigating the exceedance of an IROL. However, even if the Reliability Coordinator has an action plan for an IROL, that action plan will be based on a set of assumptions that may or may not match the real-time conditions, and the action plan may need to be modified or a new action plan may need to be developed. The expectation is that the Reliability Coordinator’s real-time system operators are competent and will be able to make modifications or develop a new action plan based on current conditions. Thus, the failure to have an action plan identified in advance, by itself, will not result in instability, separation, or cascading failures. If the Reliability Coordinator does not take any action to prevent or to mitigate exceeding an IROL, then this is a violation of IRO-009 Requirement R3 or R4 and these are assigned High VRFs.

- FERC’s Guideline 4 — Consistency with NERC’s Definition of a VRF. IRO-009-1 Requirements R1 and R2 mandate that the Reliability Coordinator have action plans to prevent exceeding identified IROLs and action plans to mitigate instances of exceeding identified IROLs. If the Reliability Coordinator fails to develop such plans, this could adversely impact the Reliability Coordinator’s readiness to address an instance of exceeding an IROL that occurred exactly as studied, but this failure would not, by itself, result in instability, separation, or cascading failures. The Reliability Coordinator’s system operators should have the ability to react to real-time conditions, and they can develop action plans as needed to address emerging conditions. As noted earlier, action plans developed in advance of real-time are developed based on a set of assumptions that do not always match the real-time conditions. System operators must be able to modify these plans to bring them into alignment with real-time conditions. The system operator’s competence is addressed in the PER-005-1 standard, Requirement R2.
- FERC’s Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-009-1, Requirements R1 and R2 each contain only one objective, therefore only one VRF was assigned to each of these requirements.
- **VRFs for IRO-009-1, Requirements R3 and R4:**
  - FERC’s Guideline 2 — Consistency within a Reliability Standard. IRO-009-1 Requirements R3 and R4 do not have any subrequirements. Therefore, only one VRF was assigned to each requirement.

- FERC’s Guideline 3 — Consistency among Reliability Standards. IRO-004-1, Requirement R6 includes actions similar to those required in IRO-009-1, Requirements R3 and R4. The VRF for IRO-004-1, Requirement R6 is High, and this is consistent with the High VRF assigned to IRO-009-1 Requirements R3 and R4.
  - FERC’s Guideline 4 — Consistency with NERC’s Definition of a VRF. The third and fourth requirements are for the Reliability Coordinator to take action to either prevent or mitigate instances of exceeding IROLs. These are both rated as “High” VRFs since, if the Reliability Coordinator fails to take prompt action, an IROL could be exceeded for a time greater than its  $T_v$ , and by definition, this would be expected to lead to instability, separation, or cascading failures.
  - FERC’s Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-009-1, Requirements R3 and R4 each contain only one objective. Therefore only one VRF was assigned to each of these requirements.
- **VRF for IRO-009-1, Requirement R5:**
    - FERC’s Guideline 2 — Consistency within a Reliability Standard. The requirement has no subrequirements. Therefore only one VRF was assigned so there is no conflict.
    - FERC’s Guideline 3 — Consistency among Reliability Standards. IRO-005-2, Requirement R13 includes actions similar to those required in IRO-009-1, Requirements R5. The VRF for IRO-005-2, Requirement R5 is High, and this is consistent with the High VRF assigned to IRO-009-1 Requirement R5.
    - FERC’s Guideline 4 — Consistency with NERC’s Definition of a VRF. IRO-009-1 Requirement R5 addresses the situation where two Reliability Coordinators have different values for the same IROL or the IROL’s  $T_v$  and requires both Reliability Coordinators to use the most conservative value. A violation of this requirement is assigned a “High” VRF because, if the Reliability Coordinator’s system operators use the wrong value of an IROL or its  $T_v$  system parameters could be allowed to exceed the “real” IROL or the “real” IROL’s  $T_v$  and this could lead, without any other violations of any other requirements, to instability, separation, or cascading failures.
    - FERC’s Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-009-1 Requirement R5 contains only one objective. Therefore only one VRF was assigned the requirement.

**R1. There are three requirements in IRO-010-1a:** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:  
*(Violation Risk Factor: Low) (Time Horizon: Operations Planning)*

- R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
  - R1.2.** Mutually agreeable format.
  - R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
  - R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.
- R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

Of the three requirements, Requirement R1 and R2 are assigned a “Lower” VRF, and Requirement R3 is assigned a “Medium” VRF.

- **VRFs for IRO-010-1a, Requirements R1 and R2:**
  - FERC’s Guideline 2 — Consistency within a Reliability Standard. The requirement and its subrequirements in Requirement R1 have a single reliability objective, therefore only one VRF was assigned. Requirement R2 has no subrequirements and is assigned a single VRF.
  - FERC’s Guideline 3 — Consistency among Reliability Standards. IRO-002-1, Requirement R2 includes actions similar to those required in IRO-010-1a, Requirements R1 and R2. The VRF for IRO-002-1, Requirement R1 is Medium, and this is inconsistent with the Lower VRF assigned to IRO-010-1a Requirements R1 and R2. The drafting team recognizes that the VRFs for IRO-010-1a Requirements R1 and R2 are lower than the VRF for the similar requirement in IRO-002-1 which is assigned a Medium VRF, however the IRO drafting team and stakeholders support the Lower VRFs based on NERC’s criteria for VSLs. IRO-010-1a, Requirement R1 is an administrative requirement, not a real-time requirement, and if IRO-010-1a, Requirement R1 were violated, by itself, there would be no impact on the bulk electric system and there would be no impact to the ability of the Reliability Coordinator to monitor and control the bulk electric system. This meets NERC’s criteria for a “Lower” VSL.

- IRO-010-1a, Requirement R1 works with other requirements in IRO-010-1a to provide the Reliability Coordinator with the data and information it needs to effectively monitor and control its portion of the bulk electric system.
  - FERC’s Guideline 4 — Consistency with NERC’s Definition of a VRF. IRO-010-1a Requirements R1 and R2 mandate that the Reliability Coordinator have and distribute a specification for data and information, and the requirements are primarily administrative. If a Reliability Coordinator fails to document its data and information needs, or fails to distribute the specification, the data specification, while a useful construct, is not the only way to identify what data is needed. The Reliability Coordinator has the authority to direct entities to provide whatever data and information it needs and the entities are required to provide that data and information. While the data specification provides a mechanism to provide the data, this is not the only mechanism the Reliability Coordinator has to obtain the data, and the failure to distribute the data specification does not mean that the needed data will not be provided to the Reliability Coordinator.
  - FERC’s Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-010-1a Requirements R1 and R2 each address a single objective and each has a single VRF.
- **VRFs for IRO-010-1a, Requirement R3:**
    - FERC’s Guideline 2 — Consistency within a Reliability Standard. The requirement has no subrequirements; only one VRF was assigned so there is no conflict.
    - FERC’s Guideline 3 — Consistency among Reliability Standards. TOP-005-1, Requirement R1 includes actions similar to those required in IRO-010-1a, Requirement R3, to provide the Reliability Coordinator with data and information. The VRF assigned to TOP-005-1, Requirement R1 is Medium, which is consistent with the VRF assigned to IRO-010-1a, Requirement R3.
    - FERC’s Guideline 4 — Consistency with NERC’s Definition of a VRF. IRO-010-1a, Requirement R3 mandates that entities provide data and information to their Reliability Coordinator. A failure to provide this data or information could affect the Reliability Coordinator’s ability to effectively monitor and control the bulk electric system. However, violation of this requirement is unlikely, by itself, to lead to bulk electric system instability, separation, or cascading failures, thus the assignment of a “Medium” VRF.
    - FERC’s Guideline 5 — Treatment of Requirements that Co-mingle More Than One Objective. IRO-010-1a Requirement R3 addresses a single objective and has a single VRF.

## Violation Severity Levels

The IRO Standard Drafting Team completed its development of IRO-008-1, IRO-009-1, and IRO-010-1a, including the development of VSLs, before FERC issued its June 19, 2008 Order on VSLs.<sup>21</sup> Accordingly, the IRO drafting team did not have the benefit of FERC’s VSL Guidelines when it developed its VSLs. In addition, the team developed its VSLs before NERC made a filing to FERC describing the way in which drafting teams assign VRFs and VSLs. Therefore, some of the proposed VSLs do not comport with FERC’s VSL Guidelines and some do not comport with the guidelines NERC submitted to FERC on August 10, 2009 in NERC’s informational filing on VRFs and VSLs.<sup>22</sup> Each set of VSLs is discussed below, and where there are VSLs that do not meet FERC’s VSL Guidelines or do not match NERC’s revised guidelines, NERC has identified the differences and will propose revisions to the VSLs in its March 1, 2010 VSL Compliance Filing.

In developing the VSLs for the IRO standards, the IROL team anticipated the evidence that would be reviewed during an audit, and developed its VSLs based on the noncompliance an auditor may find during a typical audit. The drafting team based its assignment of VSLs on the following criteria:

Lower	Moderate	High	Severe
Missing a minor element (or a small percentage) of the required performance The performance or product measured has significant value as it almost meets the full	Missing at least one significant element (or a moderate percentage) of the required performance. The performance or product measured still has significant value in	Missing more than one significant element (or is missing a high percentage) of the required performance or is missing a single vital component. The performance or	Missing most or all of the significant elements (or a significant percentage) of the required performance. The performance measured does not meet the intent of the

<sup>21</sup> *Order on Violation Severity Levels Proposed by the Electric Reliability Organization*, 123 FERC ¶ 61,284 (June 19, 2008) (“VSL Guideline Order”).

<sup>22</sup> See NERC’s Information Filing Regarding the Assignment of Violation Risk Factors and Violation Severity Levels, filed with FERC on August 10, 2009.

intent of the requirement.	meeting the intent of the requirement.	product has limited value in meeting the intent of the requirement.	requirement or the product delivered cannot be used in meeting the intent of the requirement.
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The VSLs are presented below, followed by an analysis of whether the VSLs meet the FERC Guidelines for assessing VSLs:

**Guideline 1: Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance**

Compare the VSLs to any prior Levels of Non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when Levels of Non-compliance were used.

**Guideline 2: Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties**

A violation of a “binary” type requirement must be a “Severe” VSL.

Do not use ambiguous terms such as “minor” and “significant” to describe noncompliant performance.

**Guideline 3: Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement**

VSLs should not expand on what is required in the requirement.

**Guideline 4: Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations**

. . . unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the “default” for penalty calculations.

**VSLs for IRO-008-1**

R#	Lower	Moderate	High	Severe
R1	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except two of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except three of 30 days. (R1)	Missed performing an Operational Planning Analysis that covers all aspects of the requirement for four or more of 30 days. (R1)

	one of 30 days. (R1)			
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**Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance**

- The most comparable VSLs for a similar requirement to conduct a next-day analysis are for IRO-004-1, Requirement R1. The VSLs for IRO-004-1, Requirement R1 assign a Lower VSL for missing one of 30 analyses, a Moderate for missing two, High for missing three, and a Severe for missing four or more. Thus, the VSLs in the proposed standard do not lower the level of compliance currently required by setting VSLs that are less punitive than those already approved.

**Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties**

- The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

**Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement**

- The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.

**Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations**

- The proposed VSLs do not meet this guideline, as the VSLs are based on a number of violations over a 30-day period. The VSLs will be revised so they are based on a single violation, not on the number of violations in a 30-day period.

**Compliance with NERC’s revised VSL Guidelines**

- Not applicable.

<b>R2</b>	For any sample 24 hour period within the 30 day retention period, a Real-time Assessment was not conducted for one 30-minute period. within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for two 30-minute periods within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for three 30-minute periods within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for more than three 30-minute periods within that 24-hour period (R2)
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**Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance**

- The proposed requirement is new and there are no comparable VSLs.

**Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties**

- The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

**Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement**

- The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.

**Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations**

- The proposed VSLs do not meet this guideline, as they are based on a number of violations over a 24 hour period, not on a single violation. Therefore, the VSLs will be revised in NERC’s March 1, 2010 VSL filing so they are based on a single violation, not on the number of violations over a 24-hour period.

**Compliance with NERC’s revised VSL Guidelines**

o Not applicable.				
<b>R3</b>		Shared the results with some but not all of the entities that were required to take action (R3)		Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).
<p><b>Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</b></p> <p>o The most comparable VSLs for a similar requirement to conduct a next-day analysis are for IRO-004-1, Requirement R5. The VSLs for IRO-004-1, Requirement R5 assign a Lower VSL for failing to share the results for one day during a calendar month; Moderate for failure to share results for two or three days during a calendar month, High for failure to share results for four or five days during a calendar month, and a Severe for failure to share results for more than five days during a calendar month. The VSLs in the proposed standard focus on sharing the results with some, but not all of the required entities and are stricter than the VSLs in IRO-004-1, Requirement R5.</p> <p><b>Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties</b></p> <p>o The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</p> <p><b>Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</b></p> <p>o The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.</p> <p><b>Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations</b></p> <p>o The proposed VSLs meet this guideline, as they are based on the completeness of sharing the results of a single analysis or assessment.</p> <p><b>Compliance with NERC’s revised VSL Guidelines</b></p> <p>o No changes are needed to meet NERC’s revised VSL guidelines.</p>				

**VSLs for IRO-009-1**

<b>R</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
<b>R1</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
<b>R2</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL’s



R	Lower	Moderate	High	Severe
				T <sub>v</sub> . (R2)
R3				An assessment of actual or expected system conditions predicted that an IROL in the Reliability Coordinator's Area would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)

**Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance**

- The only VSL assigned to Requirements R1 through R3 is Severe, in support of the position that any degree of noncompliance with these requirements would result in performance that did not meet the reliability-related intent of the associated requirement. Since these violations are assigned the highest possible VSL, there can be no unintended lowering of the current level of compliance.

**Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties**

- The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

**Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement**

- The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.

**Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations**

- The proposed VSLs meet this guideline, as each of the single Severe VSLs is based on a single violation – For Requirements R1 and R2, the Severe VSL is based on a failure to have an action plan to either prevent or mitigate an instance of exceeding an identified IROL. For Requirement R3, the single Severe VSL is based on a failure to act when an assessment shows that an IROL may be exceeded.

**Compliance with NERC's revised VSL Guidelines**

No changes are needed to meet NERC's revised VSL guidelines.

R4			Actual system conditions showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL T <sub>v</sub> . (R4)	Actual system conditions showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and that IROL was not resolved within the IROL's T <sub>v</sub> . (R4)
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**Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the**

R	Lower	Moderate	High	Severe
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**Current Level of Compliance**

- The most comparable VSLs for a similar requirement to direct entities to take action to resolve an IROL are for IRO-004-1, Requirement R6. The VSLs for IRO-004-1, Requirement R6 assign a Lower VSL for failing to direct actions to resolve an IROL once in a month; Moderate for failure to direct actions to resolve an IROL two or three times in a calendar month; High for failure to direct actions to resolve an IROL four or five times in a calendar month, and Severe for failure to direct actions to resolve an IROL on more than five occasions in a calendar month. The IRO drafting team’s VSLs have a “zero tolerance” for a total failure to act to resolve an IROL. The only deviation for this is to allow a High VSL for an instance where the Reliability Coordinator delays before taking action but was able to resolve the IROL before the IROL’s T<sub>v</sub>. The VSLs assigned to IRO-009-1 Requirement R4 are much more stringent than those in IRO-004-1.

**Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties**

- The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

**Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement**

- The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.

**Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations**

- The proposed VSLs meet this guideline, as each of the VSLs is based on a single violation of the requirement to take action to resolve an instance of exceeding an IROL.

**Compliance with NERC’s revised VSL Guidelines**

No changes are needed to meet NERC’s revised VSL guidelines.

R5	Not applicable.	Not applicable.	Not applicable.	There was a disagreement on the value of the IROL or its T <sub>v</sub> and the most conservative limit under consideration was not used. (R5)
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**Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance**

- The most comparable VSLs for a similar requirement to direct entities to take action to resolve an IROL are for IRO-005-2, Requirement R13. IRO-005-2, Requirement R13 has a single Severe VSL for a single instance of failure to operate to the most limiting parameter in instances where there is a difference in a limit. The same level of VSL is assigned to IRO-009-1, Requirement R5.

**Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties**

- The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

**Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement**

- The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.

**Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations**

- The proposed VSL meets this guideline, as the single, Severe VSL is based on a single violation of the requirement to use

R	Lower	Moderate	High	Severe
the most conservative IROL or IROL $T_v$ if there is disagreement on the value of that IROL or disagreement on the $T_v$ .				
<b>Compliance with NERC’s revised VSL Guidelines</b>				
No changes are needed to meet NERC’s revised VSL guidelines.				

**VSLs for IRO-010-1a**

R#	Lower	Moderate	High	Severe
<b>R1</b>	Data specification is complete with the following exception:  Missing the mutually agreeable format. (R1.2)	Data specification is complete with the following exception – no process for data provision when automated Real-Time system operating data is unavailable. (R1.4)	Data specification incomplete (missing either the list of required data (R1.1), or the timeframe for providing data. (R1.3)	No data specification (R1)
<b>R2</b>	Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status.	Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Distributed its data specification to greater than or equal to 75% - but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Data specification distributed to less than 75% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

**Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance**

- The most comparable VSLs for a similar requirement to have and distribute a data specification are in IRO-002, Requirement R2, which addresses both having a data specification and distributing that specification. The VSLs for IRO-002, Requirement R2 that address noncompliance with having a data specification assigns a Moderate VSL for having a specification that addresses the “majority” of the required data; a High VSL for having a specification that addresses “less than the majority” of the required data; and a Severe VSL for failure to develop a data specification. The VSLs in IRO-010-1a are more stringent than those in IRO-002-1, Requirement R2 as the VSLs in IRO-010-1, Requirement R1 all require, for the Lower, Moderate, and High VSLs, that the data specification address all of the required data – degrees of noncompliance are based on the additional elements that must be identified in the data specification such as the periodicity of providing the data and the format for providing the data.
- The VSLs for IRO-002-1, Requirement R2 also address noncompliance with distribution of the data specification. The VSLs in IRO-002-1, Requirement R2 are based on sending the data specification to specific functional entities such as Transmission Operators and Transmission Service Providers. The VSLs for IRO-010-1a, Requirement R2 are based on the failure to distribute to all the required entities, using percentages that range from a 5% failure for Lower; up to a 15% failure for Moderate; up to a 25% failure for a High and anything greater than 25% as Severe. Because there is no way of knowing how many entities may be involved in the distribution of the data specification, it is not possible to definitively state that the VSLs in IRO-010-1a Requirement R2 are more or less stringent than those in IRO-002-1, Requirement R2 for the same degree of noncompliant performance.

**Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties**

R#	Lower	Moderate	High	Severe
<ul style="list-style-type: none"> <li>The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</li> </ul> <p><b>Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</b></p> <ul style="list-style-type: none"> <li>The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.</li> </ul> <p><b>Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations</b></p> <ul style="list-style-type: none"> <li>The proposed VSLs meet this guideline because, for Requirement R1 they are based on the completeness of the single data specification, and for R2, they are based on the completeness of the distribution of the data specification.</li> </ul> <p><b>Compliance with NERC’s revised VSL Guidelines</b></p> <ul style="list-style-type: none"> <li>IRO-010-1a Requirement R1 has four parts (R1.1 through R1.4). The VSLs for R1 were developed using the “roll-up” approach where a single set of VSLs is developed to identify a range of noncompliant performance for the requirement “in total.” Noncompliance with each of the four parts of the requirement is addressed in one of the VSLs, based on the contribution that part of the requirement makes to the intent of the overall requirement. This matches NERC’s revised VSL guidelines.</li> <li>The phrasing and percentage of noncompliant performance in the VSLs proposed for Requirement R2 do not match the percentage thresholds that NERC proposed in its August 10, 2009 informational filing. To meet NERC’s guidelines, the VSLs will need to be rephrased so they identify the % of performance that was noncompliant rather than the % of performance that was compliant. In addition, the threshold for the Lower VSL would need to be changed to 5% or less; for a Moderate VSL the noncompliant performance would need to be more than 5% but less than or equal to 10%; for a High VSL the noncompliant performance would need to be more than 10% but less than or equal to 15%; and for a Severe VSL the noncompliant performance would need to be 15 % or more.</li> </ul>				
R3	Provided greater than or equal to 95% but less than 100% of the data and information as specified. (R3)	Provided greater than or equal to 85% but less than 95% of the data and information as specified. (R3)	Provided greater than or equal to 75% but less than 85% of the data and information as specified. (R3)	Provided less than 75% of the data and information as specified. (R3)
<p><b>Guideline 1 — Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</b></p> <ul style="list-style-type: none"> <li>The most comparable VSLs for a similar requirement to direct entities to take action to resolve an IROL are for TOP-005-1, Requirement R1. TOP-005-1, Requirement R1 has two VSLs, Lower for failure to provide “all” of the requested data, and “Severe” for failure to provide “any” of the requested data. The VSLs in IRO-010-1a provide a Lower VSL for failure to provide 5%, Moderate for failure to provide 15%, High for failure to provide 25%, and Severe for failure to provide more than 25% of the requested data and information. As such, the VSLs in IRO-010-1a, Requirement R3 are more stringent than those in TOP-005-1, Requirement R1.</li> </ul> <p><b>Guideline 2 — Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties</b></p> <ul style="list-style-type: none"> <li>The proposed VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</li> </ul> <p><b>Guideline 3 — Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</b></p> <ul style="list-style-type: none"> <li>The proposed VSLs use the same terminology as used in the associated requirement, and are, therefore, consistent with the requirement.</li> </ul> <p><b>Guideline 4 — Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations</b></p> <ul style="list-style-type: none"> <li>The requirement is not written in a manner that requires compliance to be assessed based on a single violation, so this guideline is not applicable to Requirement IRO-010-1a, Requirement R3.</li> </ul> <p><b>Compliance with NERC’s revised VSL Guidelines</b></p>				

R#	Lower	Moderate	High	Severe
<p>The phrasing and percentage of noncompliant performance in the VSLs proposed for Requirement R3 do not match the percentage thresholds that NERC proposed in its August 10, 2009 informational filing. To meet NERC's guidelines, the VSLs will need to be rephrased so they identify the % of performance that was noncompliant rather than the % of performance that was compliant. In addition, the threshold for the Lower VSL would need to be changed to 5% or less; for a Moderate VSL the noncompliant performance would need to be more than 5% but less than or equal to 10%; for a High VSL the noncompliant performance would need to be more than 10% but less than or equal to 15%; and for a Severe VSL the noncompliant performance would need to be 15 % or more.</p>				

**V. Order No. 693 Directives Relative to Retirements or Revisions of Standards Modified as a Result of new Requirements in IRO-008-1, IRO-009-1, and IRO-010-1a**

In addition to seeking approval of the proposed new standards, discussed above, this filing seeks approval to modify several FERC-approved Reliability Standards to simplify and avoid confusion with the newly proposed IRO standards when approved. To avoid having more than one requirement addressing the same activity, the IRO drafting team identified requirements in Version 0 Standards that were redundant with, or no longer needed once the proposed IRO standards were approved. For each Version 0 Standard impacted by the IRO standards, the IRO drafting team reviewed Order No. 693 to identify any FERC directives associated with the requirements recommended for retirement or revision. The drafting team's scope of work was limited to addressing only those directives associated with requirements changed as a result of the IRO Standards effort.

There are seven Version 0 standards with requirements that the IRO drafting team identified as having requirements requiring retirement or revisions in order to avoid conflicts or duplication with the proposed IRO standards. These standards and the relevant directives from FERC's Order 693 are presented in the following table. The directives associated with each of these seven standards and a narrative discussion identifying how the IRO drafting team addressed each of the relevant directives is also provided.

Relationship Between Modifications to Already Approved Standards and Directives in Order No. 693	
Modification to Associated Approved Standards	Paragraph with Associated Directives
EOP-001-0 — Emergency Operations Planning	566
IRO-002-1 — Reliability Coordination – Facilities	908
IRO-004-1 — Reliability Coordination – Operations Planning	935
IRO-005-2 — Reliability Coordination – Current Day Operations	951
TOP-003-0 — Planned Outage Coordination	1626
TOP-005-1 — Operational Reliability Information	1651
TOP-006-1 — Monitoring System Conditions	1665

## Order No. 693 Directives Associated with Requirements That are Proposed for Revision or Retirement in the IROL Implementation Plan

### Directives Associated with Modification of EOP-001-0 – Emergency Operations Planning<sup>23</sup>

Order 693 P 566. *Accordingly, the Commission concludes that Reliability Standard EOP-001-0 is just, reasonable, not unduly discriminatory or preferential and in the public interest and approves it as mandatory and enforceable. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to EOP-001-0 through the Reliability Standards development process that: (1) includes the Reliability Coordinator as an applicable entity with responsibilities as described above; (2) clarifies the 30-minute requirement in Requirement R2 of the Reliability Standard to state that load shedding should be capable of being implemented as soon as possible but in no more than 30 minutes; (3) includes definitions of system states to be used by the operators, such as transmission-related “normal,” “alert” and “emergency” states, provides criteria for entering into these states, and identifies the authority that will declare these states and (4) clarifies that the actual emergency plan elements, and not the “for consideration” elements of Attachment 1, should be the basis for compliance. Further, the Commission directs the ERO to consider a pilot program for system states, as discussed above.*

<sup>23</sup> As noted above, NERC recognizes that revised standard EOP-001 is included for approval in this filing as well as in the filing requesting approval of Emergency Preparedness and Operations Reliability Standards (“System Restoration and Blackstart Filing”) of December 31, 2009. The modifications proposed to the EOP-001 standard in this filing and in the System Restoration and Blackstart Filing include changes unique to each project. NERC cannot predict the outcome or sequence in which FERC will act on these filings. Therefore, NERC includes in Exhibit A a proposed Version 1 of EOP-001 that exclusively contains the changes directed by the IRO project in the event FERC acts on this filing before the System Restoration and Blackstart Filing or if the System Restoration and Blackstart Filing is remanded before the IRO filing is acted upon. In the event that FERC acts to approve the System Restoration and Blackstart Filing first, NERC also includes in Exhibit B Version 2 of EOP-001 that contains both the System Restoration and Blackstart team directed changes and those proposed in this IRO filing. Because EOP-001-0 is the currently-approved standard in effect, the changes proposed in this filing are applied against this Version 0. Should the System Restoration and Blackstart Filing be affirmatively acted upon first, NERC modifies its requests for FERC approval of EOP-001-2 as provided in Exhibit B.

The first directive is further clarified in Paragraph 547:

*Order 693 P 547. Given the importance NERC attributes to the reliability coordinator in connection with matters covered by EOP-001-0, the Commission is persuaded that specific responsibilities for the reliability coordinator in the development and coordination of emergency plans must be included as part of this Reliability Standard.*

The IRO drafting team limited its focus to aspects of the first two directives in Order No. 693 Paragraph 566, relative to Reliability Coordinators and the treatment of IROLs. Addressing the remaining directives was outside the scope of work assigned to the IRO drafting team.

The drafting team understood that the intent of the first directive is to ensure that the Reliability Coordinator has a requirement that identifies its responsibility relative to having plans to address operating emergencies, including plans to address the mitigation of instances of exceeding IROLs. The drafting team understood the intent of the second directive is to clarify that operating plans developed to mitigate instances of exceeding an IROL should be implemented to resolve the IROL as soon as possible but within 30 minutes.

Modifying the entire EOP-001-0 Reliability Standard was outside the scope of work assigned to the IRO drafting team. However, the IRO drafting team did modify the responsibility for Requirement R2 so that instead of assigning the Transmission Operator the responsibility for having load reduction plans for resolving IROLs, the Reliability Coordinator is responsible for having action plans that will either prevent or mitigate instances of exceeding IROLs. The Transmission Operator is not required to have the Wide-Area view necessary for developing action plans relative to IROLs. Under the direction of the Reliability Coordinator, the Transmission Operator would implement the load reduction plans. The proposed Requirements R1 and R2 in IRO-009-1 meet the intent of the first directive as it relates to IROLs. There are other types of operating emergencies, such as system restoration, and as these

standards are revised, additional clarity is being added to ensure that the Reliability Coordinator's role, as defined in the Functional Model, is implemented.

When developing the IRO standard, the IRO drafting team determined that there are some IROLs that must be resolved in a timeframe that is shorter than 30 minutes. FAC-010-1 and FAC-011-1 require that each IROL have an associated  $T_v$  with  $T_v$  defined as follows:

The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's  $T_v$  shall be less than or equal to 30 minutes.

IRO-009-1, Requirement R2, requires that each action plan developed to resolve an IROL must be capable of being executed such that the IROL is relieved within the IROL's  $T_v$ . While the drafting team did include a reference to load shedding, the team did not highlight this as the only means of resolving an IROL. IRO-009-1, Requirement R4, requires the Reliability Coordinator to act, without delay, when actual system conditions show that there is an instance of exceeding an IROL. Additionally, as discussed below, EOP-001-1 — Emergency Operations Planning, Requirement R4, which is not recommended for retirement by the IRO drafting team, requires the Transmission Operator to have load reduction plans that can be executed within a specific timeframe.

**R4.** Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:

**R4.1.** Communications protocols to be used during emergencies.

**R4.2.** A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

**R4.3.** The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.

**R4.4.** Staffing levels for the emergency.



The IRO drafting team believes that the proposed requirements collectively provide an equally effective and efficient method of achieving the objective of the second directive in Paragraph 566.

Directives 3 and 4 of paragraph 566 are outside the scope of work assigned to the IRO drafting team.

#### **Directives Associated with Modification of IRO-002-1 — Reliability Coordination — Facilities**

*Order 693 P 908. ... Reliability Standard IRO-002-1 serves an important purpose in ensuring that reliability coordinators have the information, tools and capabilities to perform their functions. The Measures and Levels of Non-Compliance submitted by NERC further enhance the Reliability Standard. Accordingly, the Commission approves Reliability Standard IRO-002-1 as mandatory and enforceable. In addition we direct the ERO to develop a modification to IRO-002-1 through the Reliability Standards development process that requires a minimum set of tools that should be made available to reliability coordinators.*

The IRO drafting team understood the intent of the directive is to ensure that the Reliability Coordinator has a set of tools to support real-time monitoring of the Reliability Coordinator's Area. The modification made to IRO-002-1 does not address any of the requirements associated with "tools" and thus the sole directive is outside the scope of the IRO drafting team's work. Therefore, this directive is being considered in Project 2009-02 — Real-time Tools.

#### **Directives Associated with Modification of IRO-004-1 — Reliability Coordination — Operations Planning**

*Order 693, P 935. Accordingly, we approve Reliability Standard IRO-004-1 as mandatory and enforceable. Further, we direct the ERO to modify IRO-004-1 through the Reliability Standards development process to require the next-day analysis to identify control actions that can be implemented and effective within 30 minutes after a contingency.*

The drafting team understood the intent of the directive is to require that the Reliability Coordinator has an action plan that can be used to resolve any IROL identified during the "day-ahead" study within 30 minutes. The drafting team believes that the intent of this objective is met through the combination of IRO-009-1 Requirements R1 and R2.

- IRO-009-1 Requirement R1 requires the Reliability Coordinator to have one or more operating procedures, processes or plans that identify actions that can be implemented in time to **prevent** exceeding each identified IROL.
- IRO-009-1 Requirement R2 requires the Reliability Coordinator to have one or more operating procedures, processes or plans that identify actions that can be implemented in time to **mitigate** the magnitude and duration of exceeding each identified IROL such that the IROL is relieved within its  $T_v$ , which may be shorter than 30 minutes.

Thus, the proposed IRO-009-1 Requirements R1 and R2 use an equally efficient and effective method of achieving the objective of the FERC directive in paragraph 935. The drafting team did not address action plans to resolve any identified SOLs. Under the Functional Model, (and TOP-002-2, Requirement R11) the Transmission Operator is responsible for conducting analyses to identify where there may be instances of exceeding SOLs, and the Transmission Operator is responsible (under TOP-008-1) for taking actions to either prevent or mitigate instances of exceeding SOLs. Under some circumstances, the Transmission Operator may request the assistance of the Reliability Coordinator in identifying or monitoring SOLs, or in developing action plans to either prevent or mitigate instances of exceeding an SOL. However, under these circumstances, the responsibility for the SOL remains with the Transmission Operator.

When developing the IRO Standards, the IRO and Facility Ratings Standard Drafting Teams determined that some IROLs must be resolved in a timeframe that is shorter than 30 minutes. FAC-010-1 and FAC-011-1 require that each IROL have an associated  $T_v$  with  $T_v$  defined as follows:

The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's  $T_v$  shall be less than or equal to 30 minutes.

IRO-009-1 Requirement R2 requires that each action plan developed to resolve an IROL must be capable of being executed such that the IROL is relieved within the IROL's  $T_v$ .

### **Directives Associated with Modification of IRO-005-2 — Reliability Coordination — Current Day Operations**

*Order 693 P951. Accordingly, the Commission approves Reliability Standard IRO-005-1 as mandatory and enforceable. Further, because IRO-005-1 has no Measures or Levels of Non-Compliance, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to IRO-005-1 through the Reliability Standards development process that includes Measures and Levels of Non-Compliance. The Commission further directs that the Measures and Levels of Non-Compliance specific to IROL violations must be commensurate with the magnitude, duration, frequency and causes of the violations and whether these occur during normal or contingency conditions. Finally, the Commission directs the ERO to conduct a survey on IROL practices and actual operating experiences by requiring reliability coordinators to report any violations of IROL, their causes, the date and time, the durations and magnitudes in which actual operations exceeds IROLs to the ERO on a monthly basis for one year beginning two months after the effective date of the Final Rule. We may propose further modifications to IRO-005-1 based on the survey results.*

There are two directives in Order No. 693 Paragraph 951. The IRO drafting team understood the intent of the first directive is to ensure that a violation of an IROL (exceeding an IROL for time greater than the IROL's  $T_v$ ) varies with the potential reliability-related impact associated with that violation. The second directive (to conduct a survey) is outside the scope of work assigned to the IRO drafting team and is not addressed here.

The ERO's Sanctions Guidelines identify that VSLs, in conjunction with the VRF, form the starting point for the determination of a penalty or sanction. The NERC Sanction Guidelines identify 12 factors that the Compliance Enforcement Authority may use to increase or decrease the size of a penalty or sanction, including instances of multiple violations, seriousness of the violation, and the frequency and duration of violations. These factors, in combination with the initial assignment of VRFs and VSLs, result in violations with penalties commensurate with the impact to reliability.

The requirements in IRO-009-1 associated with having action plans are assigned a “Medium” VRF and the requirements associated with acting to prevent or mitigate instances of exceeding an IROL are assigned a “High” VRF.

**A “High” Violation Severity Level is applied for the following:**

- Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL  $T_v$ . (R4)

**A “Severe” Violation Severity Level is applied for any of the following:**

- An IROL was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
- An IROL identified one or more days in advance does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL’s  $T_v$ . (R2)
- An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
- Actual system conditions showed that there was an instance of exceeding an IROL, and that IROL was not resolved within the IROL’s  $T_v$ . (R4)

A delay in acting to mitigate an instance of exceeding an IROL but resolving the IROL within its  $T_v$  is assigned a “High” VSL. A total violation of any of these four requirements to have plans or take actions results in a “Severe” VSL. Applying the violation of the requirements to the sanctions table:

- The violation of a Medium VRF with a Severe VSL has a sanction starting point of \$10-\$335k (failure to have action plans)
- The violation of a High VRF with a Medium VSL has a sanction starting point of \$12-\$625k (delay in acting to mitigate but resolved within  $T_v$ )
- The violation of a High VRF with a Severe VSL has a sanction starting point of \$20-\$1,000k (exceeded IROL for time greater than  $T_v$ )

The IRO Standards have VSLs, not levels of non-compliance. However, the combination of VRFs and VSLs, when applied with the Sanction Guidelines, meet the intent of the directive.

### **Directives Associated with Modification of TOP-003-0 — Planned Outage Coordination**

Order 693 P 1626. *Planned outage coordination is a necessary element of reliable operations, and TOP-003-0 promotes that goal. Accordingly, the Commission approves the Reliability Standard as mandatory and enforceable. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-003-0 through the Reliability Standards development process that: (1) includes a new requirement to communicate longer term outages well in advance to ensure reliability and accuracy of ATC calculation; (2) makes any facility below the voltage thresholds that, in the opinion of the Transmission Operator, Balancing Authority, or Reliability Coordinator, will have a direct impact on the operation of Bulk-Power System, subject to Requirement R1 for planned outage coordination and (3) incorporates an appropriate lead time for planned outages as discussed above.*

There are three directives. The IRO drafting team determined that only the third directive is associated with a requirement related to the work of the IRO drafting team.

The IRO drafting team understood the intent of the third directive is to require the Reliability Coordinator to specify, in its process or procedure for coordinating planned outages, a requirement that Generator Operators and Transmission Operators provide information on planned outages within identified lead times.

The IRO drafting team did not include a requirement to address this directive. In keeping with the original approach for developing Reliability Standards, the IRO drafting team does not believe that having a process or procedure for coordinating planned outages is the core aspect that should be retained in a mandatory, enforceable Reliability Standard. Rather, the IRO drafting team believes that having a requirement to *coordinate* planned outages such that specified criteria are met is the desired performance that leads to an adequate level of reliability. Having a process or procedure that identifies how it will coordinate planned outages is a fundamental expectation that is better suited for inclusion in the certification process for the Reliability Coordinator. Having the capability to coordinate is addressed through the required process or procedure in the entity certification process, while the actual coordination manifests itself in the body of the standard requirements. Requiring the entity applying for certification to

produce its process or procedure for coordinating planned outages ensures that the procedure exists at the point in time when the entity begins operating as a Reliability Coordinator.

Implementation of this practice can be demonstrated through the coordination taking place between entities on a daily basis.

### **Directives Associated with Modification of TOP-005-1 — Operational Reliability Information**

*Order 693 P 1651. Accordingly, the Commission approves Reliability Standard TOP-005-1. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-005-1 through the Reliability Standards development process that: (1) includes information about the operational status of special protection systems and power system stabilizers in Attachment 1 and (2) deletes references to confidentiality agreements, but addresses the issue separately to ensure that necessary protections are in place related to confidential information.*

There are two directives associated with TOP-005-1, and neither of the directives is relative to the proposed modifications the IRO drafting team made to TOP-005. The first directive is associated with Requirement R3, and Requirement R3 is not being revised or retired as a result of approving IRO-008-1, IRO-009-1, or IRO-010-1a. The second directive is associated with Requirement R2, and it is not being revised or retired as a result of approving IRO-008-1, IRO-009-1 or IRO-010-1a.

### **Directives Associated with Modification of TOP-006-1 — Monitoring System Conditions**

*Order 693 P 1665. Accordingly, the Commission approves Reliability Standard TOP-006-1. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-006-1 through the Reliability Standards Development Process that: (1) includes a new requirement related to the provision of minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk-Power System and (2) clarifies the meaning of “appropriate technical information” concerning protective relays.*

There are two directives associated with TOP-006-1, and neither of the directives relates to the proposed modifications the IRO drafting team made to Requirement R4 in TOP-006. The first directive is associated with specifying a set of minimum facility requirements for the Transmission Operator and is outside the scope of the IRO drafting team. The second directive

is associated with Requirement R3, and it is not being revised or retired as a result of approving IRO-008-1, IRO-009-1, or IRO-010-1a and is, therefore, also outside the scope of the IRO drafting team.

The second directive is relative to TOP-006-1, Requirement R3 which is not being modified or retired as a result of approving IRO-008-1, IRO-009-1, or IRO-010-1a.

**Comparison of New Requirements and Retired or Revised Requirements**

The following discussion compares the proposed IRO Standards with requirements in approved Version 0 standards, and provides an explanation supporting the decision to modify or retire specific Version 0 requirements that are either redundant with, or would conflict with requirements in the IRO standards if left unchanged.

New Standard	Modification to Associated Approved Standards
IRO-008-1 — Reliability Coordination Operational Analyses and Real-time Assessments	IRO-004-1 — Reliability Coordination – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R1 and R2</li> </ul>

**IRO-004-1**

- R1.** Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.
- R2.** Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.

**IRO-008-1**

- R1.** Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.

IRO-008-1 Requirement R1 requires the Reliability Coordinator to look at its “Wide-Area” rather than the “Reliability Coordinator Area” in conducting its Operational Planning Analyses. The definition of “Reliability Coordinator Area” is:

The collection of generation, transmission, and loads within the boundaries of the Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas.

The definition of “Wide-Area” is:

The entire Reliability Coordinator Area as well as the critical flow and status information from adjacent Reliability Coordinator Areas as determined by detailed system studies to allow the calculation of Interconnected Reliability Operating Limits.

Thus, the definition of “Wide-Area” encompasses a greater scope of facilities, and because each Reliability Coordinator is looking beyond its own borders into its neighboring Reliability Coordinators’ Areas, provides greater protection for the interconnected bulk power systems because the Reliability Coordinators will be assessing overlapping portions of the bulk power system. With IRO-004-1, Requirement R1, each Reliability Coordinator was assigned to look only at a contiguous portion of the bulk power system, and there was no requirement for one Reliability Coordinator to “look over the shoulder” of its neighboring Reliability Coordinator’s Areas.

The purpose of conducting a day-ahead analysis is not to “ensure” but to “assess” the system, making IRO-004-1 Requirement R1 incorrect. As written, IRO-004-1 seems to focus primarily on transmission issues, which should be only one aspect of focus for the Reliability Coordinator’s analysis.

IRO-008-1, Requirement R1 also does not specify any single application program that all Reliability Coordinators must use. The new requirement assumes that the Reliability Coordinator has a suite of applications, verified either as part of the certification process or



through a reliability readiness audit, that it can use to conduct its assessment. Having the *ability* to conduct a day-ahead contingency analysis is a requirement for Reliability Coordinator certification.

IRO-004-1 Requirement R2 stating “to pay particular attention to” is not clear, and is not measurable. The requirement is one facet of real-time monitoring, and impossible to measure objectively. The intent of this requirement is two-fold: to ensure that each Reliability Coordinator acts in the best interests of its interconnection, as a whole, and not based solely on conditions in its own area; and, to ensure that operations between Reliability Coordinator Areas are coordinated. The requirements in IRO-014, IRO-015, and IRO-016 are aimed at ensuring that Reliability Coordinators coordinate their actions with one another and act in the best interest of the interconnection as a whole as follows:

IRO-014-1, Requirement R1 requires the Reliability Coordinators to work together to develop operating processes, procedures and plans to identify what actions they will take when faced with a variety of predictable operating scenarios, including situations where the actions within one Reliability Coordinator Area impact another Reliability Coordinator Area (R1.1.6). Thus, if a particular geographic region has an issue with loop flows or parallel flows that require coordinated action between two or more Reliability Coordinator Areas, IRO-014-1 requires the involved Reliability Coordinators to have a specific operating process, procedure or plan that identifies what actions each will take when faced with that scenario.

IRO-015-1 requires the Reliability Coordinators to communicate with one another under specified conditions. IRO-015-1, Requirement R1.1 requires the Reliability Coordinator to make notifications to other Reliability Coordinators of conditions in its Reliability Coordinator Area that may impact other Reliability Coordinator Areas.

IRO-016-1 was written shortly after the August 2003 blackout and requires that, if Reliability Coordinators are faced with a situation where there is a difference of opinion as to whether there is an operating issue, both Reliability Coordinators must act as though the problem exists (R1.1.2). Similarly, if the Reliability Coordinators cannot agree on the best solution to an operating issue, then the involved Reliability Coordinators must act in accordance with the most conservative of the solutions identified (R1.3). In this manner, the requirements force both Reliability Coordinators to act in a manner that best protects reliability.

In addition, under the Functional Model, it is the Transmission Operator that is responsible for the real-time operation of the transmission system. The Reliability Coordinator provides oversight of the Transmission Operator's actions, directing alternate or additional actions when needed. Under TOP-002-2, each Transmission Operator is required to coordinate its operations with neighboring Transmission Operators (R4), is required to have an accurate system model (R19) for conducting system analyses, and each Transmission Operator is required to share the results of analyses with its neighboring Transmission Operators (R11). Through the use of accurate models and as a result of coordinating real-time operations and conducting and sharing its operational analyses, the Transmission Operators should have an understanding of the impact one system's operations has on its neighbor's system. Because PER-005-1 requires both the Reliability Coordinator and Transmission Operator to have training focused on the reliability-related tasks assigned to their operating personnel, these Reliability Coordinators and Transmission Operators are required to have evidence that their real-time operating personnel are competent to address issues such as parallel flows.

The new requirements in the IRO standards focus specifically on IROLs, in support of the Functional Model division of duties, and are inclusive of any reliability implications due to

parallel flows. Under the Functional Model, the Reliability Coordinator is the functional entity with primary responsibility for IROLs and the Transmission Operator is the functional entity with primary responsibility for SOLs. The “tasks” associated with the responsibilities for SOLs and the subset of SOLs that are IROLs are shared between the Reliability Coordinator and the Transmission Operator. While the Transmission Operator has primary responsibility for developing the SOLs within its Transmission Operator Area, the Transmission Operator may request the assistance of its Reliability Coordinator in developing these SOLs. It is the Reliability Coordinator that is held responsible for ensuring that IROLs are developed for its Reliability Coordinator Area in accordance with a methodology developed by the Reliability Coordinator. The Transmission Operator must share its SOLs with its Reliability Coordinator, and the Reliability Coordinator must share any SOLs it develops with its Transmission Operator. The Reliability Coordinator monitors the status of some, but not all, SOLs. The Reliability Coordinator’s visualization tools are not expected to display all SOLs within the Wide-Area that the Reliability Coordinator monitors as this would mix SOLs that have little impact on the bulk power system with those SOLs that are associated with facilities that are important to the bulk power system. The Reliability Coordinator’s visualization tools are expected to display the real-time status of parameters against all IROLs that the Reliability Coordinator monitors and also display the subset of SOLs associated with facilities that are most critical to the portions of the bulk power system that are monitored by the Reliability Coordinator.

These proposed Reliability Standards should not imply that the Reliability Coordinator will not look at its future operations with respect to specific SOLs. Reliability Coordinators must do this to ensure that their Transmission Operators are taking actions at appropriate times, but the primary responsibility for SOLs rests with the Transmission Operators. Having two entities with

the same primary responsibility is not supported by the Functional Model. The Reliability Coordinator retains the overall visibility to all operations within its Wide-Area view, including some SOLs, although the Transmission Operator is primarily responsible for actions related to SOLs.

New Standard	Modification to Associated Approved Standards
IRO-009-1 — Reliability Coordination Actions to Operate within IROLs	EOP-001-0 — Emergency Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>

**EOP-001-0**

**R2.** The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.

**IRO-009-1 R1.**

**R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.

EOP-001-0, Requirement R2 should be retired. The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. Under the Functional Model, the Transmission Operator is not required to have the capability of determining IROLs, a responsibility assigned clearly to the Reliability Coordinator. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL’s  $T_v$ , which can be shorter than 30 minutes. Load reduction plans are just one approach to resolving an IROL.

This clarification of assignment to the Reliability Coordinator should not imply that the Transmission Operator is prohibited from having load reduction plans that can be implemented within 30 minutes. Rather, the Reliability Coordinator is responsible for having an action plan

for each identified IROL that may include many options for mitigation. If an action plan includes load reductions, then the Reliability Coordinator would identify the actions needed, first, to prevent exceeding the IROL, and also have an action plan to identify actions to relieve that IROL when exceeded before reaching the IROL's  $T_v$ . If the Reliability Coordinator's analysis or assessment demonstrates that it may exceed or has exceeded an IROL, under IRO-008-1, Requirement R3, the Reliability Coordinator is required to share this information with the entities required to take action, and, if needed, the Reliability Coordinator is required to direct those entities to take those actions. The Transmission Operator is required to have load reduction plans that can be executed to meet specific plans under EOP-001-0, Requirements R3 and R4 and under EOP-003-1, Requirement R8 as follows:

**EOP-001-0**

**R3:** Each Transmission Operator and Balancing Authority shall:

- R3.1.** Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
- R3.2.** Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
- R3.3.** Develop, maintain, and implement a set of plans for load shedding.
- R3.4.** Develop, maintain, and implement a set of plans for system restoration.

**EOP-001-0**

**R4:** Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:

- R4.1.** Communications protocols to be used during emergencies.
- R4.2.** A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
- R4.3.** The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
- R4.4.** Staffing levels for the emergency.

**EOP-003-1**

**R8:** Each Transmission Operator or Balancing Authority shall have plans for operator controlled manual load shedding to respond to real-time emergencies. The Transmission Operator or Balancing Authority shall be capable of implementing the load shedding in a timeframe adequate for responding to the emergency.

This combination of requirements results in the Reliability Coordinator having responsibility for developing action plans to prevent exceeding or the mitigating an IROL when exceeded. These plans may include load shedding within the  $T_v$  timeframe that the Reliability Coordinator would coordinate with the Transmission Operators who are obligated to provide such load shedding support.

New Standard	Modification to Associated Approved Standards
IRO-009-1 — Reliability Coordination Actions to Operate within IROLs	IRO-004-1 — Reliability Coordination – Operations Planning <ul style="list-style-type: none"><li>▪ Retire R3 and R6</li></ul>

**IRO-004-1**

**R3.** Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.

**R6.** If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.

**IRO-009-1**

**R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.

**R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ .

**R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.

IRO-004-1, Requirement R3 should be retired. The use of the phrase, “in conjunction with” in this requirement is not supported by the responsibilities of the Reliability Coordinator in the Functional Model. Under the Functional Model, the Reliability Coordinator is responsible for “directing” actions. IRO-009-1 Requirements R1 and R2 require the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs. Under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities. The standard does not “preclude” coordination it just does not “require” coordination.

IRO-004-1, Requirement R6 should be also retired. IRO-009-1 Requirement R3 includes language that is more explicit than the language in IRO-004-1 Requirement R6: The phrase, “results of these studies” is not as specific as “when an assessment of actual or expected system conditions.”

New Standard	Modification to Associated Approved Standards
IRO-009-1 — Reliability Coordination Actions to Operate within IROLs	IRO-005-2 — Reliability Coordination — Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R3, R5, R16, and R17;</li> <li>▪ Modify R9, R13 and R14</li> </ul>

**IRO-005-2**

**R3.** As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.

**R5.** Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.

#### **IRO-009-1**

**R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.

**R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ .

**R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.

**R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ .

IRO-005-2, Requirement R3 should be retired. First, as written, this requirement should not lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a  $T_v$  that is much shorter than 30 minutes. Next, the action plans the Reliability Coordinator is required to have under IRO-009-1 Requirement R1 should include consideration of all available actions, including Interchange Schedules, that is contemplated by IRO-005-2 Requirement R3.

IRO-005-2, Requirement R5 may incorrectly lead the Compliance Enforcement Authority to believe that the Reliability Coordinator has information to see all SOLs. Every



facility in the Transmission Operator’s area has SOLs, and the Transmission Operator provides its SOLs to its Reliability Coordinator, but the Reliability Coordinator is not required to monitor all these limits and may not have information to determine the cause of instances of exceeding these limits. Providing all SOLs to the Reliability Coordinator is not in the best interest of reliability, as some SOLs are associated with facilities that have only a marginal impact to the bulk power system. By maintaining visualization tools that focus on the most critical facilities, the Reliability Coordinator is better able to focus on those tasks that have the greatest impact on the bulk power system.

As written, IRO-005-2, Requirement R5 is unclear regarding whether the 30 minutes is the time the Reliability Coordinator has to take action, or the time the Reliability Coordinator has to return the system to a state where the IROL is no longer violated. In addition, the requirement implies that the Reliability Coordinator must determine the cause of the IROL before taking any action. However, this is not always possible, and in many cases would delay taking action to relieve the instance of exceeding the limit. The new requirement in IRO-009-1 is very clear that the Reliability Coordinator must act without delay and must return the system to within the IROL in a timeframe that is within the IROL’s  $T_v$ .

While the requirements in IRO-005-2 are “reactive” in nature, the requirements in the proposed IRO standards are “proactive” in that they require the Reliability Coordinator to look ahead and develop specific action plans to “prevent” as well as to “mitigate” any instance of exceeding an IROL that has been identified.

New Standard	Modification to Associated Approved Standards
IRO-009-1 — Reliability Coordination Actions to Operate within IROLs	IRO-005-2 — Reliability Coordination — Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R3, R5, R16, and R17;</li> <li>▪ Modify R9, R13 and R14</li> </ul>

## **IRO-005-2**

- R14.** Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view. The Transmission Service Providers shall respect these SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
- R16.** Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.
- R17.** When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.

## **IRO-009-1**

- R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.
- R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ .

IRO-005-2, Requirement R14 should be revised, and the first sentence of IRO-005-2, Requirement R14 should be retired. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014-1, Requirement R5.1. Additionally, the second sentence of Requirement R14 requires modification because the current requirement is not correct. The Transmission Service Provider should comply with **both** SOLs and IROLs. However, Requirement R14 as written implies that the Transmission Service Provider must comply with 'either' SOLs or IROLs. NERC therefore proposes that Requirement R14 be modified as follows:

**R14.** The Transmission Service Providers shall respect ~~these SOLs or~~ and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.

IRO-005-2, Requirement R16 should be retired. The drafting team determined that, as written, Requirement R16 is too vague to be measured. The intent of this requirement is presented more clearly in the proposed IRO-008-1 and IRO-009-1. The Reliability Coordinator is always obligated to act in the best interests of the interconnection, every day and under all conditions. IRO-014-1, IRO-015-1, and IRO-016-1 were developed to require that Reliability Coordinators act in specific ways that best serve the interests of the interconnection. IRO-014-1 requires Reliability Coordinators to develop operating procedures, processes and plans for a variety of predictable scenarios where the actions in one Reliability Coordinator's Area could impact another Reliability Coordinator's Area. By forcing the Reliability Coordinators to develop these 'joint' operating procedures, the requirement forces the Reliability Coordinators to study and agree to actions that best serve the bulk power system. Similarly, IRO-015-1 requires Reliability Coordinators to share real-time information with each another in support of ensuring that the Reliability Coordinators have information needed for situational awareness of the bulk power system beyond their own Reliability Coordinator Areas. IRO-016-1 was developed following the August 2003 blackout and it requires Reliability Coordinators to take specific actions aimed at best protecting reliability in situations when those Reliability Coordinators have a difference of opinion regarding an operating scenario.

IRO-005-2, Requirement R17 should also be retired. The requirement assigns the Reliability Coordinator responsibility for operating within SOLs. However, this is the primary responsibility of the Transmission Operator. The Reliability Coordinator is responsible for ensuring that the Transmission Operator takes appropriate actions and will act or direct the

Transmission Operator to act if needed. Additionally, the requirement can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a  $T_v$  that is shorter than 30 minutes, so the requirement is not technically sound.

New Standard	Modification to Associated Approved Standards
IRO-009-1 — Reliability Coordination Actions to Operate within IROLs	IRO-005-2 — Reliability Coordination — Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R3, R5, R16, and R17;</li> <li>▪ Modify R9, R13 and R14</li> </ul>

**IRO-005-2**

**R9.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

**IRO-009-1**

- R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.
- R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL’s  $T_v$ .
- R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.
- R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL’s  $T_v$ .

IRO-005-2, Requirement R9 should be modified. This requirement actually includes two requirements: one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. The drafting team is not proposing any modifications to the requirement for coordinating outages, but is proposing a change to the requirement for coordinating the mitigation of IROLs. The first sentence of IRO-005-2, Requirement R9 should be modified as shown below to eliminate the reference to “IROL.” IRO-009-1 includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs. Therefore, if IRO-005-2, Requirement R9 were left unchanged, there would be two requirements addressing the same performance obligation.

**R9.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

New Standard	Modification to Associated Approved Standards
IRO-009-1 — Reliability Coordination Actions to Operate within IROLs	IRO-005-2 — Reliability Coordination — Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R3, R5, R16, and R17;</li> <li>▪ Modify R9, R13 and R14</li> </ul>

**IRO-005-2**

**R13.** Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.

## **IRO-009-1**

- R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.
- R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ .
- R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.
- R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ .
- R5.** If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration.

IRO-005-2, Requirement R13 should be modified. IRO-005-2, Requirement R13 has two requirements – one requirement to direct actions to ensure SOLs and IROLs are not exceeded that impact other Reliability Coordinator Areas, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015, Requirement R13 assumes that the Reliability Coordinator can see all SOLs, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs, but is not responsible for seeing all SOLs. Under the Functional Model, operating within SOLs is primarily assigned to the Transmission Operator.

IRO-014-1, Requirement R1 requires the Reliability Coordinators to work together to develop operating processes, procedures, and plans to identify what actions they will take when faced with a variety of predictable operating scenarios, including situations where the actions within one Reliability Coordinator Area impact another Reliability Coordinator Area (R1.1.6).

IRO-015-1 requires the Reliability Coordinators to follow the procedures, processes, and plans specified under IRO-014-1 and to communicate with one another under specified conditions. IRO-015-1, Requirement R1.1 specifically requires the Reliability Coordinator to make notifications to other Reliability Coordinators of conditions in its Reliability Coordinator Area that may impact other Reliability Coordinator Areas.

The second part of IRO-005-2, Requirement R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator. IRO-009-1, Requirement R5 has a similar requirement that is applicable totally to the Reliability Coordinator and focused solely on IROLs. If IRO-005-2, Requirement R13 is left unchanged, there will be more than one requirement addressing the same performance expectation.

Accordingly, IRO-005-2 Requirement R13 should be modified as follows:

**R13.** ~~Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection.~~ In instances where there is a difference in derived limits, the ~~Reliability Coordinator and its~~ Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.

New Standard	Modification to Associated Approved Standards
IRO-010-1a — Reliability Coordination Data Specification and Collection	IRO-002-1 — Reliability Coordination — Facilities <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>

**IRO-002-1**

**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.

**IRO-010-1a**

- R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:
  - R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
  - R1.2.** Mutually agreeable format.
  - R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
  - R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.
- R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.

IRO-002-1, Requirement R2 should be retired. IRO-010-1a requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed requirements are more explicit than the associated requirement in IRO-002-1. Therefore, IRO-002-1 should be retired.



New Standard	Modification to Associated Approved Standards
IRO-010-1a — Reliability Coordination Data Specification and Collection	IRO-004-1 — Reliability Coordination — Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R4 and R5</li> </ul>

### **IRO-004-1**

- R4.** Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
- R5.** Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.

### **IRO-010-1a**

- R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:
  - R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
  - R1.2.** Mutually agreeable format.
  - R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
  - R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.
- R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

IRO-004-1, Requirement R4 should be retired. IRO-004-1 only identifies a fraction of the reliability-related data needed by the Reliability Coordinator either for its own purposes or for sharing with other operating entities. By listing some, but not all types of data and information needed, some entities may default to developing a data specification that only includes those items identified in the standard, and not necessarily that providing for an “adequate level of reliability.” When there is a default set of criteria, the Compliance Enforcement Authority is expected to seek evidence limited to that default set of criteria, in effect driving performance to the lowest common denominator. The IRO drafting team considered developing a more comprehensive list of data and information but determined that any list developed would not meet the needs of all Reliability Coordinators.

IRO-010-1a is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share with other reliability entities. The periodicity for collecting the data is addressed in IRO-010-1a, Requirement R1.3.

IRO-004-1, Requirement R5 should also be retired. There are two different requirements in IRO-004-1. Requirement R5 requires that data be shared with other Reliability Coordinators and the Reliability Coordinator to share data with entities in its Reliability Coordinator Area. The first part of IRO-004-1, Requirement R5 is replaced by the proposed Requirement R3 in IRO-010-1a, requiring Reliability Coordinators to provide data to other Reliability Coordinators. The second part of the requirement in IRO-004-1, Requirement R5 is replaced by IRO-008-1, Requirement R3, requiring the Reliability Coordinator to share the results of its analyses with entities within its Reliability Coordinator Area, if those analyses meet certain conditions.

Because the new requirement is more explicit in identifying the specific conditions under which the results of the analyses is mandated, IRO-004-1, Requirements R4 and R5 should be retired.

New Standard	Modification to Associated Approved Standards
IRO-010-1a — Reliability Coordination Data Specification and Collection	IRO-005-2 — Reliability Coordination — Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>

**IRO-005-2**

**R2.** Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.

**IRO-010-1a**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

- R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
- R1.2.** Mutually agreeable format.
- R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
- R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

IRO-005-2, Requirement R2 should be retired. IRO-005-2, Requirement R2 mandates that the Reliability Coordinator “be aware of” Interchange Transactions. This requirement, as written, is not measurable as it is not possible to measure how an entity is “aware of” specific information. In addition, the e-tag system that has been implemented no longer requires the Reliability Coordinator to collect and relay interchange information to other entities. Thus, the implementation of the e-tag system replaced the need for this requirement. In addition, if a

Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010-1a Requirement R1.

New Standard	Modification to Associated Approved Standards
IRO-010-1a — Reliability Coordination Data Specification and Collection	TOP-003-0 — Planned Outage Coordination <ul style="list-style-type: none"> <li>▪ Modify R1.2</li> </ul>

**TOP-003-0**

**R1.** Generator Operators and Transmission Operators shall provide planned outage information.

**R1.1.** Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.

**R1.2.** Each Transmission Operator shall provide outage information daily to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. The Reliability Coordinator shall establish the outage reporting requirements.

**IRO-010-1a**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

**R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**R1.2.** Mutually agreeable format.

**R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

**R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

**R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.

- R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

TOP-003-0, Requirement R1.2 should be modified. TOP-003-0, Requirement R1.2 includes two distinctly different activities – a requirement for the Transmission Operator to provide other entities with daily outage information, and a requirement for the Reliability Coordinator to establish outage reporting requirements. Both parts of TOP-003-0 Requirement R1.2 are duplicated in the proposed IRO-010-1a standard.

IRO-010-1a, Requirement R1 requires the Reliability Coordinator to specify what data and information it needs, as well as the frequency and format for providing that data and information. Because the Reliability Coordinator needs outage data for modeling and analysis, the specification will include outage data.

IRO-010-1a, Requirement R3 requires entities to provide data and information to the Reliability Coordinator in accordance with that Reliability Coordinator’s specifications. Outage data is one of the types of data that is expected to be identified on the Reliability Coordinator’s documented data specification. If TOP-003-0 Requirement R1.2 is not modified, it will be redundant with IRO-010-1a, Requirement R3.

TOP-003-0, Requirement R1.2 should therefore be modified as follows:

- R1.2** Each Transmission Operator shall provide outage information daily to ~~its Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~

New Standard	Modification to Associated Approved Standards
IRO-010-1a — Reliability Coordination Data Specification and Collection	TOP-005-1 — Operational Reliability Information <ul style="list-style-type: none"> <li>▪ Retire R1 and R1.1</li> <li>▪ Modify Attachment 1</li> </ul>

**TOP-005-1**

**R1.** Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.

**R1.1** Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1<sup>24</sup>-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.

**IRO-010-1a**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

**R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**R1.2.** Mutually agreeable format.

**R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

**R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

**R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.

**R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and

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<sup>24</sup> This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.

Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

TOP-005-1, Requirement R1 and R1.1 should be retired. The intent of TOP-005-1, Requirement R1 is for the Transmission Operator to provide the Reliability Coordinator with the data and information the Reliability Coordinator needs to perform its reliability-related tasks. The intent of TOP-005-1, Requirement R1.1 is for the Reliability Coordinator to have a specification for the data and information it needs to perform its reliability-related tasks. Combining these two very different activities in a single requirement is not appropriate as the requirements occur in different timeframes and involve different operating entities. In addition, TOP-005-1, Requirement R1, as written, implies that the Reliability Coordinator will limit its use of the data and information it collects to operations within the Reliability Coordinator Area. This does not support the Functional Model which requires the Reliability Coordinator to monitor the “Wide-Area” – an area much bigger than the Reliability Coordinator Area. Each Reliability Coordinator is expected to coordinate the activities within its Reliability Coordinator Area with other Reliability Coordinators. This coordination includes exchange of data. IRO-014-1 and IRO-015-1 are just two examples of standards with requirements for Reliability Coordinators to share data and information with other Reliability Coordinators. IRO-014-1 requires Reliability Coordinators to develop operating procedures, processes, and plans for a minimum of six types of activities where coordination between Reliability Coordinators is required. These topics include, among other things, identification of the information to be exchanged between Reliability Coordinators under specified conditions (R1.1.1) and coordination of information needed for reliability assessments (R1.1.5).

Similarly, IRO-015-1, Requirement R1 requires Reliability Coordinators to follow the procedures, plans, and process specified in IRO-014-1 by exchanging reliability-related information with other Reliability Coordinators. This requirement was aimed at ensuring that the Reliability Coordinators have information needed for situational awareness of the bulk power system beyond their own Reliability Coordinator Areas.

Under IRO-010-1a each Reliability Coordinator must document what data and information it needs and which entities must provide that data. The data needed by the Reliability Coordinator is required for reliability assessments and for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in TOP-005-1 identified as having a requirement to provide the Reliability Coordinator with data) need to provide data to the Reliability Coordinator. Under the Functional Model, the Reliability Coordinator collects data and information not just from Transmission Operators and Balancing Authorities, but also from Generator Operators, Load-Serving Entities, Transmission Owners, and Generator Owners.

TOP-005-1 has other requirements that are not recommended for retirement. These requirements and TOP-005-0 Attachment 1 are used to support these other requirements. The first paragraph of Attachment 1 for TOP-005-1 includes a statement that the attachment identifies data that the Reliability Coordinator is expected to provide and share with others. This should be modified as shown below to clarify that the intent of the information sharing, pertaining to the retained requirements in TOP-005-1, is between Balancing Authorities and Transmission Operators. The Reliability Coordinator's requirement to share data with other Reliability Coordinators is addressed in IRO-010-1a Requirement R3.



This Attachment lists the types of data that ~~Reliability Coordinators~~, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with ~~each other~~ Balancing Authorities and Transmission Operators.

New Standard	Modification to Associated Approved Standards
IRO-010-1a — Reliability Coordination Data Specification and Collection	TOP-006-1 — Monitoring System Conditions <ul style="list-style-type: none"> <li>▪ Modify R4</li> </ul>

**TOP-006-1**

**R4.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system’s near-term load pattern.

**IRO-010-1a**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

**R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**R1.2.** Mutually agreeable format.

**R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

**R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

**R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

TOP-006-1, Requirement R4 should be modified. The information identified in TOP-006-1 Requirement R4 is not inclusive, and is addressed more globally for the Reliability

Coordinator in IRO-010-1a Requirements R1 and R3. The modification should be limited to removal of the Reliability Coordinator as a responsible entity.

**TOP-006-1**

- R4.** Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.

**VI. SUMMARY OF THE RELIABILITY STANDARD DEVELOPMENT PROCEEDINGS**

**a. Development History**

The project that resulted in the development of the IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments, IRO-009-1 — Reliability Coordinator Actions to Operate Within IROs, and IRO-010-1 — Reliability Coordinator Data Specification and Collection was initiated through a Standards Authorization Request in April 2002, well before the development of “Version 0” Reliability Standards. Notably, ten drafts of the standards were prepared and posted in the development of the proposed standards, which were balloted and approved by stakeholders and approved by the NERC Board of Trustees in October 2008.

From 2005 to 2007, the drafting team was on hold due to the linkages of the IRO standards with the FAC-010-1, FAC-011-1, and FAC-014-1 standards that were under development at that time. Upon completion and subsequent approval of the aforementioned FAC standards in 2007, the team re-engaged to finalize the IRO standards. As such, development activity pre-dating 2007 is acknowledged, but the discussion on the development of the IRO standards contained herein focuses on that occurring from 2007 forward, after the team re-engaged.

Draft seven of the proposed IRO standards was posted for a 45-day comment period from January 2, 2007 to February 15, 2007, just prior to the issuance of Order No. 693. There were 15

sets of comments, including comments from more than 59 individuals, representing over 39 companies, and 8 of the 10 industry segments.

The IRO Standard Drafting Team made conforming changes to the drafted standards and believed they had achieved the industry consensus needed to process through a ballot. The team requested, and the Standards Committee approved, the standards (draft 8) for a 30-day pre-ballot posting that began March 22, 2007. However, Order No. 693 was issued and resulted in the need for the team to evaluate the impacts of FERC's directives. The proposed standards were therefore removed from the pre-ballot window. In addition, the team was interested in FERC's then pending ruling on the FAC standards as these are complementary standard sets to the IRO standards. FERC ruled on the FAC standards in December 2007.

After making additional improvements for clarity that resulted from considering this "new" information available in 2007, the drafting team posted the standards (draft 9) for a 30-day comment period from March 26, 2008 through April 25, 2008. During this last posting for comments, there were 15 sets of comments, including comments from more than 100 individuals, representing over 40 companies, and 7 of the 10 industry segments.

Based on the comments received from stakeholders and FERC staff, and the drafting team's consideration of those comments, the drafting team made the following modifications to the standards:

#### **IRO-008-1**

- Added clarifying language to the definition of Operational Planning Analysis to clarify the analysis may be performed a day ahead or as much as 12 months ahead of real time.
- Added clarifying language to the VSLs for R2 to identify the VSLs are based on the review of a specific sample size.

## **IRO-009-1**

- The drafting team removed 4.2 from the Applicability Section (limited applicability to the IROLs associated with contingencies identified in FAC-010 and FAC-014) of the standard because it duplicated information already included in the requirements.
- Modified R1–R5 and associated measures and VSLs to clarify the action plans and actions in this standard are limited to those associated with IROLs in the Reliability Coordinator’s own Reliability Coordinator Area. IRO-016 addresses coordination when there is an IROL in another Reliability Coordinator’s Area, or when there is a need to coordinate development and execution of action plans involving more than one Reliability Coordinator.
- Added a parenthetical phrase to R3 to clarify the Reliability Coordinator may use any action plan at its disposal to prevent or mitigate an instance of exceeding an IROL.
- Added a parenthetical phrase to R5 to clarify “the most conservative value” is the value that has the least impact on reliability.
- Eliminated the “high” VSL for R3 in support of stakeholder comments indicating the requirement is aimed at actions, not at preventing an instance of exceeding an IROL.
- Eliminated one of the two “severe” VSLs for R5 in support of stakeholder comments indicating the two VSLs were redundant.

## **IRO-010-1**

- Modified R1 and R1.1 (in support of comments from FERC staff and stakeholders) by adding words from the purpose and from R3 to clarify the intent of the requirement is to collect data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments to prevent instability, uncontrolled separation, and cascading outages.
- Added a data retention period for R3 based on stakeholder comments. This data retention period matches the period recommended by the Compliance Program.
- Revised the VSLs for R1 by reversing the VSLs for “Lower” and “Moderate” based on stakeholder comments indicating missing the “mutually agreeable format” was less severe than missing the process for data provision when automated Real-Time system operating data is unavailable.

### **Implementation Plan:**

- Removed the recommendation to retire Attachment 1 in TOP-005-2 because stakeholders identified the attachment is still needed to support R3 in TOP-005-2.

### **Definition of Operational Planning Analysis**

- Added language to clarify the Operational Planning Analysis can be performed a day ahead or as much as 12 months ahead.

The drafting team did not adopt the following proposed modifications from stakeholders or from FERC staff:

- Some commenters, who agreed monitoring is a supporting activity, indicated a concern that removing the monitoring requirement may impact other requirements in other standards that rely upon monitoring. The drafting team did not return the monitoring requirements to the standards. Entities that do not have real-time system operators actively monitoring the status of the bulk power system cannot achieve the performance-related requirements in this standard and in other standards.
- Some commenters wanted the “Severe” VSL for failing to resolve an IROL within the IROL’s  $T_v$  to be a “High” VSL when the Reliability Coordinator took action to resolve the IROL but was not successful. The drafting team believes this change would violate the guidelines for setting VSLs. The intent of the requirement is not met if the IROL is not resolved within the IROL  $T_v$ . The guidelines for setting VSLs indicate if the intent of the requirement is mostly or totally unmet, then the VSL should be “Severe.”
- FERC staff interpreted one of the directives in Order No. 693 as requiring the Reliability Coordinator to have action plans to implement if a contingency occurs during the system adjustment period following an instance of exceeding an IROL, but before the IROL  $T_v$  has been reached and before the system has been returned to a stable state. The drafting team did not interpret the directive (paragraph 1601 of Order No. 693) in this manner. The IRO standards require an action plan for all IROLs identified a day or more ahead of the current day for all IROLs within the Reliability Coordinator’s Reliability Coordinator Area. The drafting team does not think it is practical to develop action plans for all possible contingencies that could occur during the adjustment period while the system is being returned to a stable state.
- There were several commenters who indicated the VRFs for requirements associated with having action plans should be modified from “Medium” to “High.” The drafting team had posted the VRFs for comment, and the same commenters had earlier agreed the VRFs should be “Medium.” Because the drafting team had achieved what appeared to be consensus on the VRFs in the earlier posting, the drafting team did not make the requested change. Failure to have an action plan should not, by itself, cause or contribute to uncontrolled separation, instability, or cascading.

The proposed standards (final draft 10) and associated definition were moved to a 30-day pre-ballot review period that commenced on June 20, 2008. Initial ballots were conducted from July 21 to July 30, 2008 and recirculation ballots were conducted from August 12, 2008 to August 21, 2008. As listed below, all ballots achieved a quorum and a high-weighted affirmative-approval percentage. For all three standards, the initial ballots included some

negative ballots submitted with comments, which initiated the need for recirculation ballots.

Some balloters listed more than one reason for their negative ballot. A small number of balloters changed votes from the initial to recirculation ballots; votes moved in both directions but led to a slightly decreased approval percentage.

Standard	Initial Ballots			Recirculation Ballots		
	Quorum	Approval	Negatives	Quorum	Approval	Negatives
IRO-008-1	92.67	91.71	16	93.72	89.49	22
IRO-009-1	92.63	89.44	19	93.68	86.53	27
IRO-010-1	92.71	88.40	23	93.75	85.95	30

The reasons cited for the negative ballots include the following:

**IRO-008-1, IRO-009-1 and IRO-010-1**

- One commenter mentioned the standards introduce new terms that are not defined in the NERC Glossary: “Operations Planning,” “Same Day Operations,” and “Real-time Operations.”

**IRO-008-1**

- Two balloters suggest instead of retiring IRO-004-1, Requirement R2, it should be moved to IRO-008-1; balloters indicated this may clarify the “unacceptable or undue burden” criteria.
- One balloter indicated the revised IRO-008-1, Requirement R1 language does not adequately address the need for the Reliability Coordinator to pay attention to how the actions it takes for its area can affect neighboring Reliability Coordinator areas; the balloter recommends language addressing this be added back to the standard.
- Five balloters indicated “the SDT has taken away the ability of entities to obtain study data from the Reliability Coordinator unless the entities area is specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the Reliability Coordinator upon request as they have now.”
- One balloter believes allowing next-day analyses of the expected system conditions to take place as many as 12 months ahead is too long.

## **IRO-009-1**

- Three balloters believe the references directing the Transmission Operator, Balancing Authority, and Transmission Service Provider to take actions should remain.
- One balloter agreed with R4 that the operator should act without delay to mitigate the event but was concerned that this five-minute documentation requirement could distract the operator.
- Seven balloters did not agree with the removal of the references to coordinating with the Transmission Operator and Balancing Authority; one balloter recommended that language be added acknowledging coordination must take place during the Operations Planning Time Horizon.
- One balloter believed the revised language does not make it sufficiently clear the Balancing Authority and Transmission Operator in conjunction with the Reliability Coordinator need to be involved in the development of IROL mitigation plans for their systems.
- Two balloters indicated the standard does not direct the Reliability Coordinator to inform or communicate with facilities that may be part of plans or procedures for an IROL violation forecast, which could invalidate the plans or procedures the Reliability Coordinator is putting in place.
- One balloter indicated Requirements R1 and R2 contradict each other, implying that Requirement R2 allows for a violation of Requirement R1. “R1 states ‘to prevent exceeding those IROLs,’ while R2 states ‘to mitigate the magnitude and duration of exceeding that IROL’.”
- Two balloters disagreed with the revisions to Requirement R3.

## **IRO-010-1**

- Seven balloters believe the proposed replacement requirements (IRO-010-1, Requirements R1, R2, and R3; IRO-008-1, Requirement R3) take away the ability of entities to obtain study data from the Reliability Coordinator unless entities are specifically expected to take actions for an IROL. The balloters state the current standard allows a data request at any time and believe this provision should remain.
- Four balloters believe TOP-003-0 should remain as it stands, stating that having the requirement to report outage data to the Reliability Coordinator in two places is better than not having it in TOP-003-0.
- Five balloters suggested interchange transaction data should be added to the new IRO-010-1, Requirement R1.
- Nine balloters indicated, either generally or specifically to standards and requirements, the Reliability Coordinator should still be required to share data with the Transmission Operators and Balancing Authorities.
  - Four balloters agree data requirements will be more detailed in the new standard, but stated information should not be lost by removing the Reliability Coordinator from TOP-005-1, Attachment 1.

- Four balloters disagree with removing the Reliability Coordinator from TOP-006-1, Requirement R4.
- Three balloters do not believe the IRO-010-1, Section C.M3 text is sufficient to be able to know what is adequate to confirm data were provided, particularly continually updated ICCP data used for situational awareness and online reliability tools.
- Three balloters suggested IRO-010-1 tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROLs.
- One balloter indicated the proposed standard allows for the Reliability Coordinator to ask for the addition of a significant amount of SCADA installations at the expense of the Transmission Owners in transmission areas that are not pertinent to the purpose of IRO-010-1.
- One balloter indicated the phrase “with which it has a reliability relationship” lacks clarity.
- Two balloters indicated the wording change in Requirement R1 from Real-Time Monitoring to Real-time monitoring is inconsistent with other references in the standard.
- AESO indicated it was “concerned the data the RC may decide to be required to be provided may be deemed to be confidential as per laws in Alberta, and hence the AESO will not be allowed by law to provide those to the RC.”

In response to these comments, the drafting team made the following clarifying changes to the standards before the recirculation ballot:

- The drafting team corrected the typographical error in the red line version of IRO-004 — it showed “R7” instead of “R1”.
- The drafting team also updated the references in the measures for IRO-005 to ensure they reference the correct requirements, using the new requirement numbers.

The drafting team did not make any other modifications based on comments submitted with the initial ballot for this standard. The standards proceeded through the recirculation ballot with the results as provided above.

## **VII. SUMMARY OF PROCEEDINGS FOR INTERPRETATION OF IRO-010-1a**

All persons who are directly or materially affected by the reliability of the North American bulk power system are permitted to request an interpretation of the Reliability Standard, as discussed in NERC’s *Reliability Standards Development Procedure*. When



requested, NERC will assemble a team with the relevant expertise to address the interpretation request and, within 45 days, present a formal interpretation for industry ballot. If approved by the ballot pool and the NERC Board of Trustees, the interpretation is appended to the Reliability Standard and filed for approval by FERC and regulatory authorities in Canada to be made effective when approved. When the affected Reliability Standard is next revised using the Reliability Standards Development Process, the interpretation will then be incorporated into the Reliability Standard. In this case, because the interpretation for IRO-010-1 was completed before the filing of IRO-010-1, NERC includes the development discussion of the interpretation in this section and requests FERC approval of the IRO-010-1 standard as interpreted, labeled as IRO-010-1a in **Exhibit E**.

The formal interpretation set out in **Exhibit E** has been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*; and approved by the NERC Board of Trustees on August 5, 2009. IRO-010-1 — Reliability Coordinator Data Specification and Collection is designed to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by mandating that the Reliability Coordinator have the data it needs to monitor and assess the operation of its Reliability Coordinator Area. In Requirement R1, the Reliability Coordinator shall have a documented specification for data and information in a mutually agreeable format (as required by Requirement R1.2) to build and maintain models to support real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. Requirement R3 requires each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner to

provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship.

The WECC Reliability Coordination Subcommittee requested clarification on:

1. the type of data to be supplied to the Reliability Coordinator;
2. which entities are ultimately responsible for ensuring data are provided; and,
3. what actions are expected of the Reliability Coordinator regarding a “mutually acceptable format.”

The interpretation team provided the following clarifications:

- The data to be supplied in Requirement R3 applies to the documented specification for data and information referenced in Requirement R1.
- The intent of Requirement R3 is for each responsible entity to ensure that its data and information (as stated in the documented specification in Requirement R1) are provided to the Reliability Coordinator. Another entity may provide that data or information to the Reliability Coordinator on behalf of the Responsible Entity, but the responsibility remains with the Responsible Entity. There is neither intent nor obligation for any entity to compile information from other entities and provide it to the Reliability Coordinator.
- Requirement R1.2 mandates that the parties will reach a mutual agreement with respect to the format of the data and information. If the parties can not mutually agree on the format, it is expected that they will negotiate to reach agreement or enter into dispute resolution to resolve the disagreement.

The initial ballot on the interpretation was conducted from April 22, 2009 to May 1, 2009, and achieved a quorum of 88.64 percent with a weighted affirmative approval of 84.77 percent. There were 24 negative ballots submitted for the initial ballot, and 16 of those ballots included a comment, which initiated the need for a recirculation ballot. The recirculation ballot was conducted from May 26, 2009 to June 5, 2009, and achieved a quorum of 90.45 percent with a weighted affirmative approval of 85.76 percent. There were 22 negative ballots submitted for the recirculation ballot, and 14 of those ballots included a comment.

The primary reasons cited for the negative ballots included the following:

- All balloters who voted negative listed an increased workload as a concern.

- Eleven balloters indicated the language of the interpretation could be read to mean there could be as many different negotiated methods as there are entities providing data to the Reliability Coordinator, or it could be read as requiring one agreement describing what constitutes a “mutually agreeable” format with all parties in the region.
- Six balloters did not support the “dispute resolution” suggestion, indicating these processes are time consuming and do not support reliability objectives of NERC standards.
- Four balloters indicated that Question 2, though it provides clarity, may result in an increased number of entities that perceive an obligation to provide data directly to Reliability Coordinators. The balloters cited duplicative reporting and increased burden on the WECC Reliability Coordinator department as concerns.
- Two balloters indicated the WECC Reliability Coordinator staff believes the current formats are reasonable and work with the current processes and tools; the balloters suggested one agreement with entities under its jurisdiction.

In response to the comments, the IRO standards drafting team that responded to the request stated it did not intend for the interpretation to dictate there be only one mutually agreeable format for all data and information exchange. If the Reliability Coordinator has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it. The statement that the “WECC RC staff believes that the current formats are reasonable and that they work with the current processes and tools” is the intent of the interpretation.

Others offering comments asked for clarification on the dispute resolution process. The drafting team did not think it appropriate to dictate a dispute resolution process in the interpretation. In many cases, the entities in dispute will be from the same Region; therefore, that Region’s dispute resolution process will be appropriate. However, some disputes will cross Regions or even involve more than two Regions. In those cases, the parties could agree to abide by any involved Region’s dispute resolution process.

## VIII. CONCLUSION

For the reasons stated above, NERC requests that FERC approve three new Reliability Standards, IRO-008-1, IRO-009-1, and IRO-010-1a as set out in **Exhibit A**, in accordance with Section 215(d)(1) of the FPA and Part 39.5 of FERC's regulations. NERC also requests that the herein described revisions to TOP-003-0 — Planned Outage Coordination, Requirement R1.2; TOP-005-1 — Operational Reliability Information, Attachment 1; TOP-006-1 — Monitoring System Conditions, Requirement R4; and IRO-005-2 — Reliability Coordination — Current Day Operations, Requirements R9, R13, and R14 be approved. Additionally, NERC requests that the proposed retirement of EOP-001-0 — Emergency Operations Planning, Requirement R2; IRO-002-1 — Reliability Coordination — Facilities, Requirement R2; IRO-004-1 — Reliability Coordination — Operations Planning Requirements R1 through R6; and IRO-005-2 — Reliability Coordination — Current Day Operations Requirements R2, R3, and R5, R16 and R17; and TOP-005-1 — Operational Reliability Information, Requirements R1 and R1, as also set forth in **Exhibit A**, be approved as part of this filing. NERC requests that approvals be made effective in accordance with the effective date provisions set forth in the proposed Reliability Standards. NERC also requests approval of two new definitions: Operational Planning Analysis and Real-time Assessment. Finally, NERC requests that FERC approve the interpretation to the IRO-010 standard, which is designated as IRO-010-1a in this filing.

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**CERTIFICATE OF SERVICE**

I hereby certify that I have served a copy of the foregoing document upon all parties listed on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 31st day of December, 2009.

*/s/ Holly A. Hawkins*  
Holly A. Hawkins  
*Attorney for North American Electric  
Reliability Corporation*

**Exhibit A**

Reliability Standards Proposed for Approval

**Proposed New Standard IRO-008-1**  
**(Includes Proposed Definitions for Operational Planning Analysis**  
**and Real-time Assessment)**



### **Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation. (That analysis may be performed either a day ahead or as much as 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## A. Introduction

1. **Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1.** Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2.** Each Reliability Coordinator shall perform a Real-Time Assessment at least once every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3.** When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

## C. Measures

- M1.** The Reliability Coordinator shall have, and make available upon request, the results of its Operational Planning Analyses.
- M2.** The Reliability Coordinator shall have, and make available upon request, evidence to show it conducted a Real-Time Assessment at least once every 30 minutes. This evidence could include, but is not limited to, dated computer log showing times the assessment was conducted, dated checklists, or other evidence.

- M3.** The Reliability Coordinator shall have and make available upon request, evidence to confirm that it shared the results of its Operational Planning Analyses or Real-Time Assessments with those entities expected to take actions based on that information. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated transcripts of voice records, dated facsimiles, or other evidence.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

#### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

The Reliability Coordinator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

The Reliability Coordinator shall retain evidence for Requirement R1, Measure M1 and Requirement R2, Measure M2 for a rolling 30 days. The Reliability Coordinator shall keep evidence for Requirement R3, Measure M3 for a rolling three months.

#### **1.5. Additional Compliance Information**

None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except one of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except two of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except three of 30 days. (R1)	Missed performing an Operational Planning Analysis that covers all aspects of the requirement for four or more of 30 days. (R1)
<b>R2</b>	For any sample 24 hour period within the 30 day retention period, a Real-time Assessment was not conducted for one 30-minute period. within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for two 30-minute periods within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for three 30-minute periods within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for more than three 30-minute periods within that 24-hour period (R2)
<b>R3</b>		Shared the results with some but not all of the entities that were required to take action (R3)		Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Variances**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
1	October 17, 2008	Adopted by Board of Trustees	New

**Proposed New Standard IRO-009-1**

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability:**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:** In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

- R5.** If unanimity cannot be reached on the value for an IROL or its  $T_v$ , each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

### **C. Measures**

- M1.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement R1 and Requirement R2. This evidence shall include a list of any IROLs (and each associated  $T_v$ ) identified in advance, along with one or more dated Operating Processes, Procedures, or Plans that that will be used.
- M2.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it acted or directed others to act in accordance with Requirement R3 and Requirement R4. This evidence could include, but is not limited to, Operating Processes, Procedures, or Plans from Requirement R1, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.
- M3.** For a situation where Reliability Coordinators disagree on the value of an IROL or its  $T_v$  the Reliability Coordinator shall have, and make available upon request, evidence to confirm that it used the most conservative of the values under consideration, without delay. Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence. (R5)

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

##### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints



Exception Reporting

#### 1.4. Data Retention

The Reliability Coordinator, shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain evidence of Requirement R1, Requirement R2, and Measure M1, for a rolling 12 months.

The Reliability Coordinator shall retain evidence of Requirement R3, Requirement R4, Requirement R5, Measure M2, and Measure M3 for a rolling 12 months.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records, and all IROL Violation Reports submitted since the last audit.

#### 1.5. Additional Compliance Information

**Exception Reporting:** For each instance of exceeding an IROL for time greater than IROL  $T_v$ , the Reliability Coordinator shall submit an IROL Violation Report to its Compliance Enforcement Authority within 30 days of the initiation of the event.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
<b>R2</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL's T <sub>v</sub> . (R2)
<b>R3</b>				An assessment of actual or expected system conditions predicted that an IROL in the Reliability Coordinator's Area would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
<b>R4</b>			Actual system conditions showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL T <sub>v</sub> . (R4)	Actual system conditions showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and that IROL was not resolved within the IROL's T <sub>v</sub> . (R4)
<b>R5</b>	Not applicable.	Not applicable.	Not applicable.	There was a disagreement on the value of the IROL or its T <sub>v</sub> and the most conservative limit under consideration was not used. (R5)

**E. Regional Variances**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
1	October 17, 2008	Adopted by Board of Trustees	New

**Proposed New Standard IRO-010-1a**

## A. Introduction

1. **Title:**           **Reliability Coordinator Data Specification and Collection**
2. **Number:**       IRO-010-1a
3. **Purpose:**        To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:**   In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following: (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
  - R1.1. List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
  - R1.2. Mutually agreeable format.
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.

- R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

### **C. Measures**

- M1.** The Reliability Coordinator shall have, and make available upon request, a documented data specification that contains all elements identified in Requirement R1.
- M2.** The Reliability Coordinator shall have, and make available upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. This evidence could include, but is not limited to, dated paper or electronic notice used to distribute its data specification showing recipient, and data or information requested or other equivalent evidence. (R2)
- M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and make available upon request, evidence to confirm that it provided data and information, as specified in Requirement R3. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated computer printouts, dated SCADA data, or other equivalent evidence.

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators and other functional entities that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

##### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4.Data Retention**

The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner, shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain its current, in force data specification for Requirement R1, Measure M1.

The Reliability Coordinator shall keep evidence of its most recent distribution of its data specification and evidence to show the data supplied in response to that specification for Requirement R2, Measure M2 and Requirement R3 Measure M3.

For data that is requested in accordance with Requirement R2, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Requirement R3 Measure M3 for the Reliability Coordinator's most recent data specification for a rolling 90 calendar days.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

#### **1.5. Additional Compliance Information**

**1.5.1** None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	Data specification is complete with the following exception: Missing the mutually agreeable format. (R1.2)	Data specification is complete with the following exception – no process for data provision when automated Real-Time system operating data is unavailable. (R1.4)	Data specification incomplete (missing either the list of required data (R1.1), or the timeframe for providing data. (R1.3)	No data specification (R1)
<b>R2</b>	Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status.	Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Distributed its data specification to greater than or equal to 75% - but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Data specification distributed to less than 75% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)
<b>R3</b>	Provided greater than or equal to 95% but less than 100% of the data and information as specified. (R3)	Provided greater than or equal to 85% but less than 95% of the data and information as specified. (R3)	Provided greater than or equal to 75% but less than 85% of the data and information as specified. (R3)	Provided less than 75% of the data and information as specified. (R3)



**E. Regional Variances**

None

**F. Associated Documents**

1. Appendix 1 – Interpretation of Requirements R1.2 and R3

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
1	October 17, 2008	Adopted by Board of Trustees	New
1a	August 5, 2009	Added Appendix 1: Interpretation of R1.2 and R3 as approved by Board of Trustees	Addition

## Appendix 1

### Interpretation of Requirements R1.2 and R3

Text of Requirements R1.2 and R3

- R1. The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:**
- R1.1. List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.**
  - R1.2. Mutually agreeable format.**
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).**
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.**
- R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship.**

#### Question 1

*Does the phrase, “as specified” in Requirement R3 reference the documented data and information specification in IRO-010-1 Requirement R1, or is the data and information in Requirement R3 “any” data and information that the Reliability Coordinator might request?*

**Response: The data to be supplied in Requirement R3 applies to the documented specification for data and information referenced in Requirement R1.**

#### Question 2

*Is the intent of Requirement R3 to have each responsible entity provide its own data and information to its Reliability Coordinator, or is the intent to have responsible entities provide aggregated data (collected and compiled from other entities at the direction of the Reliability Coordinator) to the Reliability Coordinator?*

**Response: The intent of Requirement R3 is for each responsible entity to ensure that its data and information (as stated in the documented specification in Requirement R1) are provided to the Reliability Coordinator.**

Another entity may provide that data or information to the Reliability Coordinator on behalf of the responsible entity, but the responsibility remains with the responsible entity. There is neither intent nor obligation for any entity to compile information from other entities and provide it to the Reliability Coordinator.

Question 3

*Under Requirement R1.2, what actions (on the part of the Reliability Coordinator) are expected to support the “mutually acceptable format” for submission of data and information?*

**Response: Requirement R1.2 mandates that the parties will reach a mutual agreement with respect to the format of the data and information. If the parties can not mutually agree on the format, it is expected that they will negotiate to reach agreement or enter into dispute resolution to resolve the disagreement.**

**Proposed Clean and Redline of EOP-001-1**

### A. Introduction

1. **Title:**       **Emergency Operations Planning**
2. **Number:**    EOP-001-1
3. **Purpose:**     Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Dates:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

### B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- R2. Each Transmission Operator and Balancing Authority shall:
  - R2.1. Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R2.2. Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R2.3. Develop, maintain, and implement a set of plans for load shedding.
  - R2.4. Develop, maintain, and implement a set of plans for system restoration.
- R3. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R3.1. Communications protocols to be used during emergencies.
  - R3.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
  - R3.3. The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
  - R3.4. Staffing levels for the emergency.
- R4. Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

- R5.** The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.
- R6.** The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:
  - R6.1.** The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.
  - R6.2.** The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.
  - R6.3.** The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
  - R6.4.** The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

**C. Measures**

- M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2.** The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

**1.3. Data Retention**

Current plan available at all times.

**1.4. Additional Compliance Information**

Not specified.

## Standard EOP-001-1 — Emergency Operations Planning

### 2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs.  Or 25 to 50% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs.  Or 50% to 75% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs.  Or more than 75% of those agreements do not contain provisions for emergency assistance.
R2	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with four (4) of the sub-components.
R2.1	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.
R2.2	The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not maintained.	The Transmission Operator or Balancing Authority's transmission system emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for emergencies on the transmission system.

**Standard EOP-001-1 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R2.3	The Transmission Operator or Balancing Authority's load shedding plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.	The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.
R2.4	The Transmission Operator or Balancing Authority's system restoration plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's system restoration plans are partially compliant with the requirement but are not maintained.	The Transmission Operator or Balancing Authority's restoration plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for system restoration.
R3	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.
R3.1	The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.
R3.2	The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.	N/A	The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.	The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.



**Standard EOP-001-1 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R3.3	The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.
R3.4	The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency	N/A	N/A	N/A
R4	The Transmission Operator and Balancing Authority's emergency plan has complied with 90% or more of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 70% to 90% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with between 50% to 70% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 50% or less of the number of sub-components
R5	The Transmission Operator and Balancing Authority is missing minor program/procedural elements.	The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans	The Transmission Operator and Balancing Authority has failed to annually review two of its emergency plans or communicate with one of it's neighboring Balancing Authorities.	The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with its Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.
R6	The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.

**Standard EOP-001-1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
R6.1	The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.	N/A	N/A	N/A
R6.2	The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.	N/A	N/A	N/A
R6.3	The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.	N/A	N/A	N/A
R6.4	The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.	N/A	N/A	N/A

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Deleted R2 Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels Corrected typographical errors in BOT approved version of VSLs	Revised

**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system's own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

A. Introduction

1. Title: Emergency Operations Planning

~~1.2.~~ Number: EOP-001-~~0-1~~

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~~1.3.~~ Purpose: Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.

~~1.4.~~ Applicability

4.1. Balancing Authorities.

~~4.1.4.2.~~ Transmission Operators.

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5. Effective Date: In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

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~~5.~~ Twenty four months after the first day of the first calendar quarter following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, all requirements go into effect twenty four months after Board of Trustees adoption.

B. Requirements

R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.

~~R2.~~ The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.

~~R1.R2.~~ Each Transmission Operator and Balancing Authority shall:

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~~R3.1.R2.1.~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.

~~R3.1.R2.2.~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.

~~R3.1.R2.3.~~ Develop, maintain, and implement a set of plans for load shedding.

~~R3.1.R2.4.~~ Develop, maintain, and implement a set of plans for system restoration.

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~~R4.R3.~~ Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:

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~~R4.1.R3.1.~~ Communications protocols to be used during emergencies.

R4.1.R3.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

R4.1.R3.3. The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.

R4.1.R3.4. Staffing levels for the emergency.

R5.R4. Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

**R5.** The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.

R5.R6. The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:

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R7.1.R6.1. The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.

R7.1.R6.2. The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.

R7.1.R6.3. The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)

R7.1.R6.4. The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

### C. Measures

**M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.

M1.M2. The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

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### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

##### 1.2. Compliance Monitoring Period and Reset Timeframes

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

**1.3. Data Retention**

Current plan available at all times.

**1.4. Additional Compliance Information**

Not specified.

2.1. Violation Severity Levels

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Requirement	Lower	Moderate	High	Severe
R1	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs. Or 25 to 50% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs. Or 50% to 75% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs. Or more than 75% of those agreements do not contain provisions for emergency assistance.

<del>R2</del>	<del>The Transmission Operator has demonstrated the existence of the emergency load reduction plan but the plan will take longer than 30 minutes.</del>	<del>N/A</del>	<del>The Transmission Operator fails to include details on how load reduction is to be implemented in sufficient amount and time to mitigate IROL violation.</del>	<del>The Transmission Operator failed to demonstrate the existence of emergency load reduction plans for all identified IROLs.</del>
R23	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	N/A	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.

R23.1	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.
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R23.2	The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not maintained.	The Transmission Operator or Balancing Authority's transmission system emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for emergencies on the transmission system.
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**Standard EOP-001-0-1— Emergency Operations Planning**

<a href="#">R3R2</a> .3	The Transmission Operator or Balancing Authority's load shedding plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.	The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.
<a href="#">R2.4</a>	The Transmission Operator or Balancing Authority's system restoration plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's system restoration plans are partially compliant with the requirement but are not maintained.	The Transmission Operator or Balancing Authority's restoration plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for system restoration.
<a href="#">R43</a>	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.
<a href="#">R4R3</a> .1	The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.
<a href="#">R4R3</a> .2	The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.	N/A	The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.	The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.
<a href="#">R43</a> .3	The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.
<a href="#">R34.4</a>	The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency	N/A	N/A	N/A

**Standard EOP-001-0-1— Emergency Operations Planning**

R45	The Transmission Operator and Balancing Authority’s emergency plan has complied with 90% or more of the number of sub-components.	The Transmission Operator and Balancing Authority’s emergency plan has complied with 70% to 90% of the number of sub-components.	The Transmission Operator and Balancing Authority’s emergency plan has complied with between 50% to 70% of the number of sub-components.	The Transmission Operator and Balancing Authority’s emergency plan has complied with 50% or less of the number of sub-components
R56	The Transmission Operator and Balancing Authority is missing minor program/procedural elements.	The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans	The Transmission Operator and Balancing Authority has failed to annually review two of its emergency plans or communicate with one of it's neighboring Balancing Authorities.	The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with its Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.
R67	The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.
R7R6.1	The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.	N/A	N/A	N/A
R7R6.2	The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.	N/A	N/A	N/A
R7R6.3	The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.	N/A	N/A	N/A

Standard EOP-001-0-1— Emergency Operations Planning

<a href="#">R7R6.4</a>	The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.	N/A	N/A	N/A
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**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August <del>5, 2009</del>	Approved by Board of Trustees <a href="#">Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels</a> <a href="#">Corrected typographical errors in BOT approved version of VSLs</a>	Revision
<del>2</del>	<del>October 17, 2008</del>	<del>Approved by Board of Trustees</del> <del>Deleted R2</del>	<del>Revision</del>

Adopted by NERC Board of Trustees: ~~August~~ [October 17, 2008](#)

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Effective Date: TBD

**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.

±2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.

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±3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.

±4. System energy use — The reduction of the system's own energy use to a minimum.

±5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.

±6. Load management — Implementation of load management and voltage reductions, if appropriate.

±7. Optimize fuel supply — The operation of all generating sources to optimize the availability.

±8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.

±9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.

±10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.

±11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.

±12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.

±13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.

±14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.

±15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

**Proposed Clean and Redline of IRO-002-2**

**A. Introduction**

- 1. Title:** **Reliability Coordination — Facilities**
- 2. Number:** IRO 002-2
- 3. Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
- 4. Applicability**
  - 4.1.** Reliability Coordinators.
- 5. Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

**B. Requirements**

- R1.** Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.
- R2.** Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.
- R3.** Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.
- R4.** Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.
- R5.** Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the

status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.

- R6.** Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.
- R7.** Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.
- R8.** Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

### **C. Measures**

- M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 3.
- M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 3.
- M3.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.
- M4.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 6.
- M5.** Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 7)
- M6.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will



be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 8 Part 1.

- M7.** Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 8 Part 2.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### **1.3. Data Retention**

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1 through 7.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

#### **1.4. Additional Compliance Information**

None.

**2. Violation Severity Levels:**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R1	The Reliability Coordinator has demonstrated communication facilities for both voice and data exist to all appropriate entities and that they are staffed and available but they are less than adequate.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with one appropriate entity or 2) Data links with one appropriate entity.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with two appropriate entities or 2) Data links with two appropriate entities.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with more than two appropriate entities or 2) Data links with more than two appropriate entities or 3) Communication facilities are not staffed or 4) Communication facilities are not ready.
R2	N/A	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with one of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with two of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with three of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.
R3	N/A	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to one of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to two or more of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to all of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with all neighboring Reliability Coordinators.

**Standard IRO-002-2 — Reliability Coordination — Facilities**

Requirement	Lower	Moderate	High	Severe
R4	The Reliability Coordinator's monitoring systems provide information in a way that is not easily understood and interpreted by the Reliability Coordinator's operating personnel or particular emphasis was not given to alarm management and awareness systems, automated data transfers and synchronized information systems.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that one potential or actual SOL or IROL violation is not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that two or more potential and actual SOL and IROL violations are not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that all potential and actual SOL and IROL violations are identified.
R5	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in one SOL violations or 2) or operating reserves for a small portion of the Reliability Authority Area.	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or to system restoration, 2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations, or 3) operating reserves.	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing two or more IROLs; or one IROL and to system restoration, 2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations and operating reserves, or 3) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or system restoration and operating reserves.	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all IROLs and to system restoration, or 2) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all SOL violations and operating reserves.

**Standard IRO-002-2 — Reliability Coordination — Facilities**

Requirement	Lower	Moderate	High	Severe
R6	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing all pre-contingency flows,</li> <li>2) analysis tools capable of assessing all post-contingency flows, or</li> <li>3) all necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing the majority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing the majority of post-contingency flows, or</li> <li>3) the majority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing a minority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing a minority of post-contingency flows, or</li> <li>3) a minority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing any pre-contingency flows,</li> <li>2) analysis tools capable of assessing any post-contingency flows, or</li> <li>3) any necessary wide-area overview displays exist.</li> </ol>
R7	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored SOLs when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor SOLs when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored one IROL when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor one IROL when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored two or more IROLs when the main monitoring system was unavailable,</li> <li>2) it or a delegated entity monitored SOLs and one IROL when the main monitoring system was unavailable</li> <li>3) it has provisions to monitor two or more IROLs when the main monitoring system is not available, or</li> <li>4) it has provisions to monitor SOLs and one IROL when the main monitoring system was unavailable.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it continuously monitored its Reliability Authority Area.</p>
R8	<p>Reliability Coordinator has approval rights for planned maintenance outages of analysis tools but does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.</p>	<p>Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools.</p>	<p>Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools and does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.</p>	<p>Reliability Coordinator approval is not required for planned maintenance.</p>

**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Deleted R2, M3 and associated compliance elements Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs) Corrected typographical errors in BOT approved version of VSLs	Revised
2	October 17, 2008	Adopted by Board of Trustees	Revised

Style Definition: Requirement:  
Indent: Left: 18 pt, Outline  
numbered + Level: 1 + Numbering  
Style: 1, 2, 3, ... + Start at: 1 +  
Alignment: Left + Aligned at: 0 pt +  
Tab after: 18 pt + Indent at: 18 pt

Style Definition: Style Requirement  
+ Left: 0" First line: 0": Font: Bold

## A. Introduction

1. **Title:** Reliability Coordination — Facilities
2. **Number:** IRO 002-42
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.

**5. Proposed Effective Date:** January 1, 2007 ~~First day of first quarter, three months after regulatory approvals.~~

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In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

**R1.** Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.

~~**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities, or adjacent Reliability Coordinators.~~

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~~**R3-R2.**~~ Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.

~~**R4-R3.**~~ Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.

~~**R5-R4.**~~ Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.

**R5.** Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric

System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.

~~R7.R6.~~ Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.

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~~R8.R7.~~ Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.

~~R9.R8.~~ Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

### C. Measures

**M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 3.

**M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 4.3.

~~R10.~~ Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a letter to Transmission Operators, Balancing Authorities, Transmission Owners, Generator Owners, Generator Operators, and Load Serving Entities, or adjacent Reliability Coordinators, or other equivalent evidence that will be used to confirm that the Reliability Coordinator has requested the data required to support its reliability coordination tasks. (Requirement 2)

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~~M4.M3.~~ Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.

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~~M5.M4.~~ Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 7.6.

~~M6.M5.~~ Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 8.7)

**M7.M6.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 9.8 Part 1.

**M8.M7.** Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 9.8 Part 2.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance Monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### **1.3. Data Retention**

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1 through 8.7.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

#### **1.4. Additional Compliance Information**



None.

~~2. Levels of Non-Compliance for a Reliability Coordinator~~

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Did not confirm that the network used for data exchange to other Reliability Coordinators is secure as specified in R3.~~

~~2.3. Level 3: There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~2.3.1 Has not requested the data required to support its reliability coordination tasks. (Requirement 2)~~

~~2.4. Does not control its Reliability Coordinator analysis tools, including the exercising of final approvals for planned maintenance (R7) or does not have current procedures in place to mitigate the effects of analysis tool outages as specified in R9.~~

~~2.5. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.5.1 Does not have or could not demonstrate the use of voice communication facilities (or show data links) to one or more Transmission Operators, Generator Operators or Balancing Authorities with authority over Bulk Electrical System equipment or with one or more neighboring Reliability Coordinators. (R1 and R4)~~

~~2.5.2 Does not have real-time monitoring capability of its Reliability Coordinator Area and surrounding Reliability Coordinator Areas as specified in R5.~~

~~1.4.1 Does not have a documented procedure for the use of its backup monitoring facilities. (R8)~~

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

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2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator has demonstrated communication facilities for both voice and data exist to all appropriate entities and that they are staffed and available but they are less than adequate.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with one appropriate entity or 2) Data links with one appropriate entity.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with two appropriate entities or 2) Data links with two appropriate entities.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with more than two appropriate entities or 2) Data links with more than two appropriate entities or 3) Communication facilities are not staffed or 4) Communication facilities are not ready.

Requirement	Lower	Moderate	High	Severe
R2	<p><del>The Reliability Coordinator demonstrated that it</del></p> <p><del>1) determined its data requirements and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators with a material impact on the Bulk Electric System in its Reliability Coordination Area but did not request the data from Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators with minimal impact on the Bulk Electric System in its Reliability Coordination Area or</del></p> <p><del>2) determined its data requirements necessary to perform its reliability functions with the exceptions of data that may be needed for administrative purposes such as data</del></p>	<p><del>The Reliability Coordinator demonstrated that it determined the majority but not all of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</del></p>	<p><del>The Reliability Coordinator demonstrated that it determined</del></p> <p><del>1) some but less than the majority of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators or</del></p> <p><del>2) all of its data requirements necessary to support its reliability coordination functions but failed to demonstrate that it requested data from two of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</del></p>	<p><del>The Reliability Coordinator failed to demonstrate that it</del></p> <p><del>1) determined its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators or</del></p> <p><del>2) requested the data from three or more of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</del></p>

Requirement	Lower	Moderate	High	Severe
	reporting.			

Standard IRO-002-4.2 — Reliability Coordination — Facilities

Requirement	Lower	Moderate	High	Severe
<u>R3R2</u>	N/A	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with one of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with two of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with three of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.
<u>R4R3</u>	N/A	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to one of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to two or more of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to all of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with all neighboring Reliability Coordinators.
<u>R5R4</u>	The Reliability Coordinator's monitoring systems provide information in a way that is not easily understood and interpreted by the Reliability Coordinator's operating personnel or particular emphasis was not given to alarm management and awareness systems, automated data transfers and synchronized information systems.	The Reliability Coordinator has failed to demonstrate that it has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that one potential or actual SOL or IROL violation is not identified.	The Reliability Coordinator has failed to demonstrate that it has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that two or more potential and actual SOL and IROL violations are not identified.	The Reliability Coordinator has failed to demonstrate that it has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that all potential and actual SOL and IROL violations are identified.

Requirement	Lower	Moderate	High	Severe
<u>R6R5</u>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in one SOL violations or</li> <li>2) or operating reserves for a small portion of the Reliability Authority Area.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or to system restoration,</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations, or</li> <li>3) operating reserves.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing two or more IROLs; or one IROL and to system restoration,</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations and operating reserves, or</li> <li>3) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or system restoration and operating reserves.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all IROLs and to system restoration, or</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all SOL violations and operating reserves.</li> </ol>
<u>R7R6</u>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing all pre-contingency flows,</li> <li>2) analysis tools capable of assessing all post-contingency flows, or</li> <li>3) all necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing the majority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing the majority of post-contingency flows, or</li> <li>3) the majority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing a minority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing a minority of post-contingency flows, or</li> <li>3) a minority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing any pre-contingency flows,</li> <li>2) analysis tools capable of assessing any post-contingency flows, or</li> <li>3) any necessary wide-area overview displays exist.</li> </ol>

Standard IRO-002-4.2 — Reliability Coordination — Facilities

Requirement	Lower	Moderate	High	Severe
<u>R8R7</u>	The Reliability Coordinator failed to demonstrate that: 1) it or a delegated entity monitored SOLs when the main monitoring system was unavailable or 2) it has provisions to monitor SOLs when the main monitoring system is not available.	The Reliability Coordinator failed to demonstrate that: 1) it or a delegated entity monitored one IROL when the main monitoring system was unavailable or 2) it has provisions to monitor one IROL when the main monitoring system is not available.	The Reliability Coordinator failed to demonstrate that: 1) it or a delegated entity monitored two or more IROLs when the main monitoring system was unavailable, 2) it or a delegated entity monitored SOLs and one IROL when the main monitoring system was unavailable 3) it has provisions to monitor two or <del>or</del> more IROLs when the main monitoring system is not available, or 4) it has provisions to monitor SOLs and one IROL when the main monitoring system was unavailable.	<b>R9.</b> The Reliability Coordinator failed to demonstrate that it continuously monitored its Reliability Authority Area.
<u>R9R8</u>	Reliability Coordinator has approval rights for planned maintenance outages of analysis tools but does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.	Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools.	Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools and does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.	Reliability Coordinator approval is not required for planned maintenance.

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**E. Regional Differences/Variations**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
<u>2</u>		<u>Deleted R2, M3 and associated compliance elements</u> <u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u> <u>Corrected typographical errors in BOT approved version of VSLs</u>	<u>Revised</u>

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**Proposed Clean and Redline of IRO-004-2**

**A. Introduction**

1. **Title:** **Reliability Coordination — Operations Planning**
2. **Number:** IRO-004-2
3. **Purpose:** Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
  - 4.3. Transmission Service Providers.
5. **Effective Date:** In those jurisdictions where no regulatory approval is required, the standard shall be retired on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall be retired effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

**B. Requirements**

- R1. Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.

**C. Measures**

- M1. None

**D. Compliance**

**1. Compliance Monitoring Process**

Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on site audit, Reliability Coordinators will be asked to provide documentation showing that next-day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits, etc.

- 1.1. **Compliance Monitoring Responsibility**
- 1.2. **Compliance Monitoring Period and Reset Time Frame**
- 1.3. **Data Retention**
- 1.4. **Additional Compliance Information**

**2. Violation Severity Levels**

Requirement	Lower	Moderate	High	Severe
R1	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on one (1) occasion during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on two (2) to three (3) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on four (4) to five (5) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on more than five (5) occasions during a calendar month.

**E. Regional Variances**

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels Retired R1 through R6, and associated Measures, Data Retention, and VSLs	Revision
2	October 17, 2008	Adopted by Board of Trustees	Revised

## Standard IRO-004-1-2 — Reliability Coordination — Operations Planning

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### A. Introduction

1. **Title:** Reliability Coordination — Operations Planning
2. **Number:** IRO-004-1-2
3. **Purpose:** Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.
4. **Applicability**

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#### ~~4.1. Reliability Coordinators.~~

~~4.2.4.1. Balancing Authorities.~~

~~4.3.4.2. Transmission Operators.~~

~~4.4.4.3. Transmission Service Providers.~~

~~4.5. Transmission Owners.~~

~~4.6. Generator Owners.~~

~~4.7. Generator Operators.~~

~~4.8. Load Serving Entities.~~

**5. Effective Date:** ~~November 1, 2006~~

~~5. In those jurisdictions where no regulatory approval is required, the standard shall be retired on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.~~

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~~In those jurisdictions where regulatory approval is required, the standard shall be retired effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.~~

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### B. Requirements

~~R1. Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.~~

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~~R2. Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.~~

~~R3. Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.~~

~~R4. Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load Serving Entity in the Reliability Coordinator Area shall provide~~

~~information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.~~

~~R5. Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.~~

~~R6. If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.~~

~~R7. R1.~~ Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.

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### C. Measures

~~M1. Evidence that the Reliability Coordinator conducted next day contingency analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System could be operated reliably in anticipated normal and Contingency conditions. None~~

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### D. Compliance

#### 1. Compliance Monitoring Process

Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on site audit, Reliability Coordinators will be asked to provide documentation showing that next-day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits, etc.

##### 1.1. Compliance Monitoring Responsibility

~~Self Certification: Each Reliability Coordinator must annually self certify compliance to its Regional Reliability Organization with the completion of the studies and action plans in Requirements R1, R2 and R3.~~

~~Exception Reporting: Reliability Coordinators will prepare a monthly report to the Regional Reliability Organization for each month that system studies were not conducted, indicating the dates that studies were not done and the reason why.~~

##### 1.2. Compliance Monitoring Period and Reset Time Frame

~~One year without a violation from the time of the violation.~~

##### 1.3. Data Retention

~~Documentation shall be available for 3 months to provide verification that system studies were performed as required.~~

##### 1.4. Additional Compliance Information

None identified.

**2. Levels of Non-Compliance**

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- ~~2.1. Level 1: System studies were not conducted for one day in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~
- ~~2.2. Level 2: System studies were not conducted for 2-3 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~
- ~~2.3. Level 3: System studies were not conducted for 4-5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~
- 1.5. **Level 4:** System studies were not conducted for more than 5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.

Standard IRO-004-1.2 — Reliability Coordination — Operations Planning

2. Violation Severity Levels

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Requirement	Lower	Moderate	High	Severe
R1	<del>The Reliability Coordinator failed to conduct next day reliability analyses or contingency analysis for its Reliability Coordinator Area for one (1) day during a calendar month.</del>	<del>The Reliability Coordinator failed to conduct next day reliability analyses or contingency analysis for its Reliability Coordinator Area for two (2) to three (3) days during a calendar month.</del>	<del>The Reliability Coordinator failed to conduct next day reliability analyses or contingency analysis for its Reliability Coordinator Area for four (4) to five (5) days during a calendar month.</del>	<del>The Reliability Coordinator failed to conduct next day reliability analyses or contingency analysis for its Reliability Coordinator Area for more than five (5) days during a calendar month.</del>
R2	N/A	N/A	N/A	<del>The Reliability Coordinator failed to monitor parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</del>
R3	<del>The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for one (1) day during a calendar month.</del>	<del>The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for two (2) to three (3) days during a calendar month.</del>	<del>The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for four (4) to five (5) days during a calendar month.</del>	<del>The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for more than five (5) days during a calendar month.</del>



Standard IRO-004-1.2 — Reliability Coordination — Operations Planning

Requirement	Lower	Moderate	High	Severe
R4	<del>The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1-R4 for one (1) day during a calendar month.</del>	<del>The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1-R4 for two (2) to three (3) days during a calendar month.</del>	<del>The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1-R4 for four (4) to five (5) days during a calendar month.</del>	<del>The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1-R4 for more than five (5) days during a calendar month.</del>
R5	<del>The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for one (1) day during a calendar month.</del>	<del>The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for two (2) to three (3) days during a calendar month.</del>	<del>The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for four (4) to five (5) days during a calendar month.</del>	<del>The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for more than five (5) days during a calendar month.</del>
R6	<del>The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on one (1) occasion during a calendar month.</del>	<del>The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on two (2) to three (3) occasions during a calendar month.</del>	<del>The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on four (4) to five (5) occasions during a calendar month.</del>	<del>The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on more than five (5) occasions during a calendar month.</del>

**Standard IRO-004-1.2 — Reliability Coordination — Operations Planning**

Requirement	Lower	Moderate	High	Severe
R7	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on one (1) occasion during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on two (2) to three (3) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on four (4) to five (5) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on more than five (5) occasions during a calendar month.

E. Regional ~~Differences~~ Variances

~~None identified.~~

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels</u> <u>Retired R1 through R6, and associated Measures, Data Retention, and VSLs</u>	<u>Revision</u>

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**Proposed Clean and Redline of IRO-005-3**

## A. Introduction

1. **Title:** Reliability Coordination — Current Day Operations
2. **Number:** IRO-005-3
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.
5. **Effective Date:** In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:
  - R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.
  - R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.4. System real and reactive reserves (actual versus required).
  - R1.5. Capacity and energy adequacy conditions.
  - R1.6. Current ACE for all its Balancing Authorities.

- R1.7.** Current local or Transmission Loading Relief procedures in effect.
- R1.8.** Planned generation dispatches.
- R1.9.** Planned transmission or generation outages.
- R1.10.** Contingency events.
- R2.** Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.
- R3.** Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.
- R4.** The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.
- R5.** Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.
- R6.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.
- R7.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.
- R8.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.
- R9.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability

Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

- R10.** In instances where there is a difference in derived limits, the Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
- R11.** The Transmission Service Provider shall respect SOLs and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
- R12.** Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.

### **C. Measures**

- M1.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.
- M2.** If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2 and Requirement 10)
- M3.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 6)
- M4.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement 7.

- M5.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 8 Part 1.
- M6.** The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 8 Part 2)
- M7.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1)
- M8.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 11 Part 1)
- M9.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 12)
- M10.** If there is an instance where there is a disagreement on a derived limit, the Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (Part 2 of Requirement 13)
- M11.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in



accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.(Requirement 14 Part 2)

**M12.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 15 Part 1.

**M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 15 Part 2.

**M14.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated.  
(Requirement 15 Part 3)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### 1.3. Data Retention

For Measures 1 and 9, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures 2–8 and Measures 12 through 13, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure 6, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure 10, the Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure 11, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

### 1.4. Additional Compliance Information

None.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

**2. Violation Severity Levels:**

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator failed to monitor one (1) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor two (2) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor more than three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.
R1.1	The Reliability Coordinator failed to monitor the current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.	N/A	N/A	N/A
R1.2	The Reliability Coordinator failed to monitor current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A
R1.3	The Reliability Coordinator failed to monitor current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A
R1.4	The Reliability Coordinator failed to monitor system real and reactive reserves (actual versus required).	N/A	N/A	N/A

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.5	The Reliability Coordinator failed to monitor capacity and energy adequacy conditions.	N/A	N/A	N/A
R1.6	The Reliability Coordinator failed to monitor current ACE for all its Balancing Authorities.	N/A	N/A	N/A
R1.7	The Reliability Coordinator failed to monitor current local or Transmission Loading Relief procedures in effect.	N/A	N/A	N/A
R1.8	The Reliability Coordinator failed to monitor planned generation dispatches.	N/A	N/A	N/A
R1.9	The Reliability Coordinator failed to monitor planned transmission or generation outages.	N/A	N/A	N/A
R1.10	The Reliability Coordinator failed to monitor contingency events.	N/A	N/A	N/A
R2	N/A	The Reliability Coordinator failed to direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities.	The Reliability Coordinator failed to issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	The Reliability Coordinator failed to monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves was provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R3	N/A	N/A	The Reliability Coordinator ensured its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information, but failed to assist, when needed, in the development of any required response plans.	The Reliability Coordinator failed to ensure its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information.
R4	N/A	N/A	N/A	The Reliability Coordinator failed to disseminate information within its Reliability Coordinator Area, when required.
R5	N/A	N/A	The Reliability Coordinator monitored system frequency and its Balancing Authorities' performance but failed to direct any necessary rebalancing to return to CPS and DCS compliance.	The Reliability Coordinator failed to monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance or the responsible entity failed to utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R6	N/A	The Reliability Coordinator coordinated with Transmission Operators, Balancing Authorities, and Generator Operators, as needed, to develop action plans to mitigate potential or actual SOL, CPS, or DCS violations but failed to implement said plans, or the Reliability Coordinator coordinated pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in the real-time reliability analysis timeframe but failed to coordinate pending generation and transmission maintenance outages in the next-day reliability analysis timeframe.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations, or the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations and the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.
R7	N/A	N/A	N/A	The Reliability Coordinator failed to assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities, when necessary.
R8	N/A	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange and discussed corrective actions with the appropriate Balancing Authority but failed to direct the Balancing Authority to	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange but failed to discuss corrective actions with the appropriate Balancing Authority.	The Reliability Coordinator failed to identify sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
		comply with CPS and DCS.		
R9	N/A	N/A	N/A	The Reliability Coordinator failed to be aware of the impact on inter-area flows of an inter-Balancing Authority or inter-Transmission Operator, following the operation of a Special Protection System that is armed (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation), or the Transmission Operator failed to immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.
R10	N/A	N/A	N/A	The responsible entity failed to operate the Bulk Electric System to the most limiting parameter in instances where there was a difference in derived limits.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R11	N/A	N/A	N/A	The Transmission Service Provider failed to respect SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
R12	N/A	The Reliability Coordinator failed to notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.	N/A	The Reliability Coordinator who foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area failed to issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area, or the receiving Reliability Coordinator failed to disseminate this information to its impacted Transmission Operators and Balancing Authorities.



**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Retired R2, R3, R5; modified R9, R13 and R14; retired R16 and R17 Retired M2 and M3; modified M9 and M12; retired M13 Made conforming changes to data retention Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs) Retired VSLs associated with R2, R3, R5, R16 and R17; Modified VSLs associated with R9 and R13, and R14	Revised
2	October 17, 2008	Adopted by Board of Trustees	Revision

**A. Introduction**

- 1. **Title:** Reliability Coordination — Current Day Operations
- 2. **Number:** IRO-005-23
- 3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
- 4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.
- 5. **Effective Date:** ~~January 1, 2007~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

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**B. Requirements**

- R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:
  - R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.
  - R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.4. System real and reactive reserves (actual versus required).
  - R1.5. Capacity and energy adequacy conditions.
  - R1.6. Current ACE for all its Balancing Authorities.

- R1.7. Current local or Transmission Loading Relief procedures in effect.
- R1.8. Planned generation dispatches.
- R1.9. Planned transmission or generation outages.
- R1.10. Contingency events.

~~R2. Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.~~

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~~R3. As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.~~

R4.R2. Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.

~~R5. Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.~~

R6.R3. Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.

R7.R4. The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.

R8.R5. Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

R9.R6. The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

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**R10.R7.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.

**R11.R8.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.

**R12.R9.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

~~**R13.R10.** Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection.~~ In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.

~~**R14.R11.** Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide area view.~~ The Transmission Service Provider~~s~~ shall respect ~~these~~ SOLs ~~or~~ and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.

**R15.R12.** Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.

~~**R16.** Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.~~

~~**R17.** When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.~~

### **C. Measures**

**M1.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS

availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.

~~M2. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Historical Tag Archive information, Interchange Transaction records, computer printouts, voice recordings or transcripts of voice recordings or equivalent evidence that will be used to confirm that it was aware of and made Interchange Transaction information available to all other Reliability Coordinators, as specified in Requirement 2.~~

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~~M3. If a potential or actual IROL violation occurs, the Reliability Coordinator involved in the event shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, system event logs, operator action notes or equivalent evidence that will be used to determine if it initiated control actions or emergency procedures to relieve that IROL violation within 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~

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~~M4.M2.~~ If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2 and Requirement 10)

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~~M5.M3.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 6)

~~M6.M4.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement 7.

~~M7.M5.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 8 Part 1.

~~M8.M6.~~ The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 8 Part 2)

~~M9.M7.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS,

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or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1)

**M10.M8.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 11 Part 1)

**M11.M9.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 12)

**M12.M10.** If there is an instance where there is a disagreement on a derived limit, the ~~Reliability Coordinator~~, Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (Part 2 of Requirement 13)

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~~**M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it provided SOL and IROL information to Transmission Service Providers within its Reliability Coordinator Area. (Requirement 14, Part 1)~~

**M14.M11.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14 Part 2)

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**M15.M12.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 15 Part 1.

**M16.M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 15 Part 2.

**M17.M14.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated. (Requirement 15 Part 3)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### **1.3. Data Retention**

For Measures 1 and ~~4~~9, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures 2-~~10-8~~ and ~~Measure 13, and~~ Measures ~~4~~5-12 through ~~4~~613, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure ~~8~~6, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure ~~12~~10, the ~~Reliability Coordinator,~~ Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure ~~4~~411, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

None.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

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~~2. Levels of Non-Compliance for a Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider~~

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Not applicable.~~

~~2.3. Level 3: Not applicable.~~

~~2.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.4.1. Did not follow the Reliability Coordinator's directives in accordance with R8 Part 2).~~

~~2.4.2. Did not operate to the most limiting parameter when a difference in derived limits existed. (R13 Part 2)~~

~~3. Levels of Non-Compliance for a Reliability Coordinator:~~

~~3.1. Level 1: Not applicable.~~

~~3.2. Level 2: Did not make Interchange Transaction information available to all other Reliability Coordinators in the Interconnection. (Requirement 2)~~

~~3.3. Level 3: There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~3.3.1. Did not communicate to each of its Balancing Authorities and Transmission Operators to make them aware of GMD forecast information or did not assist in the development of any required response plans to a predicted GMD. (Requirement 6)~~

~~3.3.2. Did not disseminate information within its Reliability Coordinator Area. (Requirement 7)~~

~~3.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~3.4.1. Does not meet one or more of the requirements as specified in requirement 1 (Requirements 1.1 through R1.9)~~

~~3.4.2. Did not make Interchange Transaction information available to all other Reliability Coordinators. (Requirement 2)~~



- ~~3.4.3 Did not initiate control actions or emergency procedures to relieve an IROL violation without delay, and no longer than 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~
- ~~3.4.4 Did not direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2)~~
- ~~3.4.5 Did not monitor the system frequency or each of its Balancing Authorities performance or did not direct rebalancing to return to DCS and CPS compliance. (Requirement 8 Part 1)~~
- ~~3.4.6 Did not coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. (Requirement 9)~~
- ~~3.4.7 When it identified a source of large Area Control Errors, it did not initiate corrective actions with the appropriate Balancing Authority if the problem was inside its Reliability Coordinator Area. (Requirement 11 part 1)~~
- ~~3.4.8 Did not provide evidence that it was aware of the impact of the operation of a Special Protection System on inter area flows. (Requirement 12)~~
- ~~3.4.9 Did not operate to the most limiting parameter when a difference in derived limits existed. (Requirement 13 Part 2)~~
- ~~3.4.10 Did not provide Transmission Service Providers with SOLs or IROLs (within the Reliability Coordinator's wide area view) (Requirement 14 Part 1)~~
- ~~3.4.11 Did not issue alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area. (Requirement 15)~~

#### **4. Levels of Non-Compliance for a Transmission Service Provider**

~~4.1. Level 1: Not applicable.~~

~~4.2. Level 2: Not applicable.~~

~~4.3. Level 3: Not applicable.~~

~~4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~4.4.1 Did not operate to the most limiting parameter when a difference in derived limits existed. (R13 Part 2)~~

~~1.4.1 Did not respect the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14 Part 2)~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator failed to monitor one (1) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor two (2) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor more than three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.
R1.1	The Reliability Coordinator failed to monitor the current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.	N/A	N/A	N/A
R1.2	The Reliability Coordinator failed to monitor current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.	N/A	N/A	N/A

**Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.3	The Reliability Coordinator failed to monitor current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.	N/A	N/A	N/A
R1.4	The Reliability Coordinator failed to monitor system real and reactive reserves (actual versus required).	N/A	N/A	N/A
R1.5	The Reliability Coordinator failed to monitor capacity and energy adequacy conditions.	N/A	N/A	N/A
R1.6	The Reliability Coordinator failed to monitor current ACE for all its Balancing Authorities.	N/A	N/A	N/A
R1.7	The Reliability Coordinator failed to monitor current local or Transmission Loading Relief procedures in effect.	N/A	N/A	N/A
R1.8	The Reliability Coordinator failed to monitor planned generation dispatches.	N/A	N/A	N/A
R1.9	The Reliability Coordinator failed to monitor planned transmission or generation outages.	N/A	N/A	N/A

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R1.10	The Reliability Coordinator failed to monitor contingency events.	N/A	N/A	N/A
<del>R2</del>	<del>N/A</del>	<del>N/A</del>	<del>The Reliability Coordinator was aware of all Interchange Transactions that wheeled through, sourced, or sunked in its Reliability Coordinator Area, but failed to make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</del>	<del>The Reliability Coordinator failed to be aware of all Interchange Transactions that wheeled through, sourced, or sunked in its Reliability Coordinator Area, and failed to make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</del>
<del>R3</del>	<del>N/A</del>	<del>The Reliability Coordinator worked with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and initiated control actions or emergency procedures to relieve the violation within 30 minutes, but failed to ensure all resources, including load shedding, were available to address a potential or actual IROL violation.</del>	<del>The Reliability Coordinator worked with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and ensured all resources, including load shedding, were available to address a potential or actual IROL violation, but failed to initiate control actions or emergency procedures to relieve the violation within 30 minutes.</del>	<del>The Reliability Coordinator failed to work with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and failed to initiate control actions or emergency procedures to relieve the violation within 30 minutes.</del>

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R4R2</u>	N/A	The Reliability Coordinator failed to direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities.	The Reliability Coordinator failed to issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	The Reliability Coordinator failed to monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves was provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.
<del>R5</del>	<del>N/A</del>	<del>N/A</del>	<del>The Reliability Coordinator identified the cause of a potential or actual SOL or IROL violation, but failed to initiate a control action or emergency procedure to relieve the potential or actual IROL violation within 30 minutes.</del>	<del>The Reliability Coordinator failed to identify the cause of a potential or actual SOL or IROL violation and failed to initiate a control action or emergency procedure to relieve the potential or actual IROL violation.</del>
<u>R6R3</u>	N/A	N/A	The Reliability Coordinator ensured its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information, but failed to assist, when needed, in the development of any required response plans.	The Reliability Coordinator failed to ensure its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information.

Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<del>R7</del> <u>R4</u>	N/A	N/A	N/A	The Reliability Coordinator failed to disseminate information within its Reliability Coordinator Area, when required.
<del>R8</del> <u>R5</u>	N/A	N/A	The Reliability Coordinator monitored system frequency and its Balancing Authorities' performance but failed to direct any necessary rebalancing to return to CPS and DCS compliance.	The Reliability Coordinator failed to monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance or the responsible entity failed to utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R9R6</u>	N/A	The Reliability Coordinator coordinated with Transmission Operators, Balancing Authorities, and Generator Operators, as needed, to develop action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations but failed to implement said plans, or the Reliability Coordinator coordinated pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in the real-time reliability analysis timeframe but failed to coordinate pending generation and transmission maintenance outages in the next-day reliability analysis timeframe.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations, or the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations and the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.
<u>R10R7</u>	N/A	N/A	N/A	The Reliability Coordinator failed to assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities, when necessary.

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<del>R11R8</del>	N/A	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange and discussed corrective actions with the appropriate Balancing Authority but failed to direct the Balancing Authority to comply with CPS and DCS.	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange but failed to discuss corrective actions with the appropriate Balancing Authority.	The Reliability Coordinator failed to identify sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange.
<del>R12R9</del>	N/A	N/A	N/A	The Reliability Coordinator failed to be aware of the impact on inter-area flows of an inter-Balancing Authority or inter-Transmission Operator, following the operation of a Special Protection System that is armed (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation), or the Transmission Operator failed to immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.



Standard IRO-005-~~2.3~~ — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R13R10</u>	N/A	N/A	N/A	<p><del>The Reliability Coordinator failed to shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load Serving Entities, and Purchasing-Selling Entities operated to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area could result in a SOL or IROL violation in another area of the Interconnection or t</del>The responsible entity failed to operate the Bulk Electric System to the most limiting parameter in instances where there was a difference in derived limits.-</p>

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R14R11</u>	N/A	N/A	N/A	<del>The Reliability Coordinator failed to make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide area view, or t</del> The Transmission Service Providers failed to respect <del>these</del> SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
<u>R15R12</u>	N/A	The Reliability Coordinator failed to notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.	N/A	The Reliability Coordinator who foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area failed to issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area, or the receiving Reliability Coordinator failed to disseminate this information to its impacted Transmission Operators and Balancing Authorities.

Standard IRO-005-~~2.3~~ — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R16	N/A	N/A	<del>The Reliability Coordinator confirmed the reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas and discussed options to mitigate potential or actual SOL or IROL violations, but failed to take actions as necessary to always act in the best interests of the Interconnection at all times.</del>	<del>The Reliability Coordinator failed to confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas, or failed to discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</del>

Standard IRO-005-~~2.3~~ — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R17	N/A	N/A	N/A	<del>The Reliability Coordinator either failed to evaluate the local and wide area impacts of an IROL or SOL that was exceeded, in either real time or post contingency, or the Reliability Coordinator evaluated the local and wide area impacts of an IROL or SOL that was exceeded, both real time and post contingency, and determined that the actions being taken were not appropriate and sufficient to return the system to within IROL in thirty (30) minutes, but failed to direct the Transmission Operator, Balancing Authority, Generator Operator, or Load Serving Entity to return the system to within IROL or SOL.</del>

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Retired R2, R3, R5; modified R9, R13 and R14; retired R16 and R17</u> <u>Retired M2 and M3; modified M9 and M12; retired M13</u> <u>Made conforming changes to data retention</u> <u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u> <u>Retired VSLs associated with R2, R3, R5, R16 and R17;</u> <u>Modified VSLs associated with R9 and R13, and R14</u>	<u>Revised</u>

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**Proposed Clean and Redline of TOP-003-1**

**A. Introduction**

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-1
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

**B. Requirements**

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.

- R3.** Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4.** Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

**C. Measures**

- M1.** Evidence that the Generator Operator, Transmission Operator, and Balancing Authority reported and coordinated scheduled outage information as indicated in the requirements above.

**D. Compliance**

**1. Compliance Monitoring Process**

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

**1.1. Compliance Monitoring Responsibility**

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

**1.2. Compliance Monitoring Period and Reset Timeframe**

One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

One calendar year.

**1.4. Additional Compliance Information**

Not specified.



2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Generator Operator failed to provide outage information, in accordance with its Transmission Operators established outage reporting requirements, to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW).
R1.1	N/A	N/A	N/A	The Transmission Operator failed to provide outage information, in accordance with its Reliability Coordinators established outage reporting requirement, to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.

**Standard-TOP-003-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R1.2	The responsible entity failed to provide the information by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.	N/A	N/A	N/A
R1.3	N/A	N/A	N/A	The responsible entity failed to plan or coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators when required.
R2	The responsible entity planned and coordinated scheduled outages of telemetering and control equipment and associated communication channels with its Reliability Coordinator, but failed to coordinate with affected neighboring Transmission Operators, Balancing Authorities, and Generator Operators.	N/A	N/A	The responsible entity failed to plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.

**Standard-TOP-003-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R3	N/A	N/A	N/A	The Reliability Coordinator failed to resolve any scheduling of potential reliability conflicts.
R4	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 30 minutes but less than or equal to 35 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 35 minutes but less than or equal to 40 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 40 minutes but less than or equal to 45 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 45 minutes.

**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Modified R1.2 Modified M1 Replaced Levels of Non-compliance with the February 28, BOT approved Violation Severity Levels (VSLs)	Revised

A. Introduction

- 1. **Title:** Planned Outage Coordination
- 2. **Number:** TOP-003-01
- 3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
- 4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
- 5. **Proposed Effective Date:** April 1, 2005

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

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B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to its ~~Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.

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- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.
- R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

#### C. Measures

- M1. Evidence that the Generator Operator, Transmission Operator, and Balancing Authority, ~~and Reliability Coordinator~~ reported and coordinated scheduled outage information as indicated in the requirements above.

#### D. Compliance

##### 1. Compliance Monitoring Process

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

##### 1.1. Compliance Monitoring Responsibility

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

##### 1.2. Compliance Monitoring Period and Reset Timeframe

One calendar year without a violation from the time of the violation.

##### 1.3. Data Retention

One calendar year.

**1.4. Additional Compliance Information**

Not specified.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

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~~2. Levels of Non-Compliance~~

~~2.1. Level 1: Each entity responsible for reporting information under Requirements R1 and R3 has a process in place to provide information to their Reliability Coordinator but does not have a process in place (where permitted by legal agreements) to provide this information to the neighboring Balancing Authority or Transmission Operator.~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

1.5. **Level 4:**—There is no process in place to exchange outage information, or the entity responsible for reporting information under Requirements R1 to R3 does not follow the directives of the Reliability Coordinator to cancel or reschedule an outage.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Generator Operator failed to provide outage information, in accordance with its Transmission Operators established outage reporting requirements, to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW).



Standard-TOP-003-0-1 — Planned Outage Coordination

Requirement	Lower	Moderate	High	Severe
R1.1	N/A	N/A	N/A	The Transmission Operator failed to provide outage information, in accordance with its Reliability Coordinators established outage reporting requirement, to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.
R1.2	The responsible entity failed to provide the information by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.	N/A	N/A	N/A

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Requirement	Lower	Moderate	High	Severe
R1.3	N/A	N/A	N/A	The responsible entity failed to plan or coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators when required.
R2	The responsible entity planned and coordinated scheduled outages of telemetering and control equipment and associated communication channels with its Reliability Coordinator, but failed to coordinate with affected neighboring Transmission Operators, Balancing Authorities, and Generator Operators.	N/A	N/A	The responsible entity failed to plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
R3	N/A	N/A	N/A	The Reliability Coordinator failed to resolve any scheduling of potential reliability conflicts.

**Standard-TOP-003-0-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R4	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 30 minutes but less than or equal to 35 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 35 minutes but less than or equal to 40 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 40 minutes but less than or equal to 45 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 45 minutes.

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E. Regional ~~Differences~~Variances

None identified.

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Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Modified R1.2</u> <u>Modified M1</u> <u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u>	<u>Revised</u>

**Proposed Clean and Redline of TOP-005-2**

## A. Introduction

1. **Title:** **Operational Reliability Information**
2. **Number:** TOP-005-2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Purchasing Selling Entities.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”
- R2. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.
- R3. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

## C. Measures

- M1. Evidence that the Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

## D. Compliance

1. **Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

**1.2. Compliance Monitoring Period and Reset Time Frame**

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

Not specified.

**1.4. Additional Compliance Information**

Not specified.

**2. Violation Severity Levels:**

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The ISN data recipient failed to sign the NERC Confidentiality Agreement for “Electric System Reliability Data”.
R2	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.
R3	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.



**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Removed the Reliability Coordinator from the list of responsible functional entities Deleted R1 and R1.1 Modified M1 to omit the reference to the Reliability Coordinator Deleted VSLs for R1 and R1.1	Revised

## Attachment 1-TOP-005

### Electric System Reliability Data

This Attachment lists the types of data that Balancing Authorities, and Transmission Operators are expected to share with other Balancing Authorities and Transmission Operators.

1. The following information shall be updated at least every ten minutes:
  - 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:
    - 1.1.1 Status.
    - 1.1.2 MW or ampere loadings.
    - 1.1.3 MVA capability.
    - 1.1.4 Transformer tap and phase angle settings.
    - 1.1.5 Key voltages.
  - 1.2. Generator data.
    - 1.2.1 Status.
    - 1.2.2 MW and MVAR capability.
    - 1.2.3 MW and MVAR net output.
    - 1.2.4 Status of automatic voltage control facilities.
  - 1.3. Operating reserve.
    - 1.3.1 MW reserve available within ten minutes.
  - 1.4. Balancing Authority demand.
    - 1.4.1 Instantaneous.
  - 1.5. Interchange.
    - 1.5.1 Instantaneous actual interchange with each Balancing Authority.
    - 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.
    - 1.5.3 Interchange Schedules for the next 24 hours.
  - 1.6. Area Control Error and frequency.
    - 1.6.1 Instantaneous area control error.
    - 1.6.2 Clock hour area control error.
    - 1.6.3 System frequency at one or more locations in the Balancing Authority.
2. Other operating information updated as soon as available.
  - 2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.

- 2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.
- 2.3. Forecast peak demand for current day and next day.
- 2.4. Forecast changes in equipment status.
- 2.5. New facilities in place.
- 2.6. New or degraded special protection systems.
- 2.7. Emergency operating procedures in effect.
- 2.8. Severe weather, fire, or earthquake.
- 2.9. Multi-site sabotage.

**A. Introduction**

- 1. **Title:** Operational Reliability Information
- 2. **Number:** TOP-005-~~42~~
- 3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
- 4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.

~~4.3. Reliability Coordinators.~~

~~4.4.4.3.~~ Purchasing Selling Entities.

- 5. **Proposed Effective Date:** ~~November 1, 2006~~

~~In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.~~

~~In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.~~

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**B. Requirements**

~~R1. Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.~~

~~R1.1. Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.~~

**R2.R1.** As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”

**R3.R2.** Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.

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~~R4.R3.~~ Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

**C. Measures**

M1. Evidence that the ~~Reliability Coordinator~~, Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

**1.2. Compliance Monitoring Period and Reset Time Frame**

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

Not specified.

**1.4. Additional Compliance Information**

Not specified.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

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~~2. Levels of Non-Compliance~~

~~2.1. Level 1: — Each entity responsible for reporting information under Requirements R1 to R5 is providing the requesting entities with the data required, in specified time intervals and format, but there are problems with consistency of delivery identified in the measuring process that need remedy (e.g., the data is not supplied consistently due to equipment malfunctions, or scaling is incorrect).~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

1.5. ~~Level 4: — Each entity responsible for reporting information under Requirements R1 to R5 R3 is not providing the requesting entities with data with the specified content, timeliness, or format. The information missing is included in the requesting entity's list of data.~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
<u>R1</u>	The responsible entity failed to provide all of the data requested by its Reliability Coordinator.	N/A	N/A	The responsible entity failed to provide all of the data requested by its Reliability Coordinator.
<u>R1.1</u>	N/A	N/A	N/A	The Reliability Coordinator failed to identify the data necessary to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.
<u>R2R1</u>	N/A	N/A	N/A	The ISN data recipient failed to sign the NERC Confidentiality Agreement for “Electric System Reliability Data”.
<u>R3R2</u>	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.
<u>R4R3</u>	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.

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**E. Regional ~~Differences~~Variances**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<a href="#">Removed the Reliability Coordinator from the list of responsible functional entities</a> <a href="#">Deleted R1 and R1.1</a> <a href="#">Modified M1 to omit the reference to the Reliability Coordinator</a> <a href="#">Deleted VSLs for R1 and R1.1</a>	<u>Revised</u>

**Attachment 1-TOP-005-0**  
**Electric System Reliability Data**

This Attachment lists the types of data that ~~Reliability Coordinators~~, Balancing Authorities, and Transmission Operators are expected to ~~provide, and are expected to~~ share with ~~each~~ other Balancing Authorities and Transmission Operators.

1. The following information shall be updated at least every ten minutes:
  - 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:
    - 1.1.1 Status.
    - 1.1.2 MW or ampere loadings.
    - 1.1.3 MVA capability.
    - 1.1.4 Transformer tap and phase angle settings.
    - 1.1.5 Key voltages.
  - 1.2. Generator data.
    - 1.2.1 Status.
    - 1.2.2 MW and MVAR capability.
    - 1.2.3 MW and MVAR net output.
    - 1.2.4 Status of automatic voltage control facilities.
  - 1.3. Operating reserve.
    - 1.3.1 MW reserve available within ten minutes.
  - 1.4. Balancing Authority demand.
    - 1.4.1 Instantaneous.
  - 1.5. Interchange.
    - 1.5.1 Instantaneous actual interchange with each Balancing Authority.
    - 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.
    - 1.5.3 Interchange Schedules for the next 24 hours.
  - 1.6. Area Control Error and frequency.
    - 1.6.1 Instantaneous area control error.
    - 1.6.2 Clock hour area control error.
    - 1.6.3 System frequency at one or more locations in the Balancing Authority.
2. Other operating information updated as soon as available.



- 2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.
- 2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.
- 2.3. Forecast peak demand for current day and next day.
- 2.4. Forecast changes in equipment status.
- 2.5. New facilities in place.
- 2.6. New or degraded special protection systems.
- 2.7. Emergency operating procedures in effect.
- 2.8. Severe weather, fire, or earthquake.
- 2.9. Multi-site sabotage.

**Proposed Clean and Redline of TOP-006-2**

## A. Introduction

1. **Title:** **Monitoring System Conditions**
2. **Number:** TOP-006-2
3. **Purpose:** To ensure critical reliability parameters are monitored in real-time.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Generator Operators.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.
  - R1.1. Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
  - R1.2. Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
- R2. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.
- R3. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.
- R4. Each Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.
- R5. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions and to indicate, if appropriate, the need for corrective action.

- R6.** Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
- R7.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

### **C. Measures**

- M1.** The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

### **D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### **1.3. Data Retention**

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.

Each Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

### **1.4. Additional Compliance Information**

None.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The responsible entity failed to know the status of all generation and transmission resources available for use, even though said information was reported by the Generator Operator, Transmission Operator, or Balancing Authority.
R1.1	N/A	N/A	N/A	The Generator Operator failed to inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
R1.2	N/A	N/A	N/A	The responsible entity failed to inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
R2	N/A	The responsible entity monitors the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, but is not aware of the status of rotating and static reactive resources.	The responsible entity fails to monitor all of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of all rotating and static reactive resources.	The responsible entity fails to monitor any of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**Standard TOP-006-2 — Monitoring System Conditions**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R3	The responsible entity failed to provide any of the appropriate technical information concerning protective relays to their operating personnel.	N/A	N/A	The responsible entity failed to provide all of the appropriate technical information concerning protective relays to their operating personnel.
R4	N/A	N/A	The responsible entity has either weather forecasts or past load patterns, available to predict the system's near-term load pattern, but not both.	The responsible entity failed to have both weather forecasts and past load patterns, available to predict the system's near-term load pattern.
R5	N/A	N/A	The responsible entity used monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions, but does not have indication of the need for corrective action.	The responsible entity failed to use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions.
R6	N/A	N/A	N/A	The responsible entity failed to use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
R7	N/A	N/A	N/A	The responsible entity failed to monitor system frequency.

**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Modified R4 Modified M4 Modified Data Retention for M4 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised



## A. Introduction

1. **Title:** Monitoring System Conditions

2. **Number:** TOP-006-~~4~~2

~~3.~~ **Purpose:**

3. To ensure critical reliability parameters are monitored in real-time.

4. **Applicability**

4.1. Transmission Operators.

4.2. Balancing Authorities.

4.3. Generator Operators.

4.4. Reliability Coordinators.

5. **Proposed Effective Date:** ~~January 1, 2007~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

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## B. Requirements

**R1.** Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.

**R1.1.** Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.

**R1.2.** Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.

**R2.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**R3.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.

**R4.** Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.

**R5.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important

deviations in operating conditions and to indicate, if appropriate, the need for corrective action.

- R6. Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
- R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

### C. Measures

- M1. The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4. Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

### D. Compliance

- 1. Compliance Monitoring Process

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

**1.3. Data Retention**

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.

Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

**1.4. Additional Compliance Information**

None.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

~~2. Levels of Non-Compliance for Reliability Coordinators:~~

~~2.1. Level 1: Not applicable.~~

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~~2.2. Level 2: Not applicable.~~

~~2.3. Level 3: Not applicable.~~

~~2.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.4.1 Does not monitor all of the applicable items listed in Requirement 2.~~

~~2.4.2 Did not have the information specified in R4.~~

~~2.4.3 Did not bring to the attention of its operators, important deviations in operating conditions and the need for corrective actions. (Requirement 5)~~

~~2.4.4 No evidence it monitors system frequency. (Requirement 7)~~

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~~3. Levels of Non-Compliance for Generator Operators:~~

~~3.1. Level 1: Not applicable.~~

~~3.2. Level 2: Not applicable.~~

~~3.3. Level 3: Not applicable.~~

~~3.4. Level 4: Did not inform its Host Balancing Authority and/or the Transmission Operator of all generation resources available for use. (R1.1)~~

~~4. Levels of Non-Compliance for Transmission Operators and Balancing Authorities:~~

~~4.1. Level 1: Not applicable.~~

~~4.2. Level 2: Not applicable.~~

~~4.3. Level 3: Not applicable.~~

~~4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~4.4.1 Did not inform the Reliability Coordinator and/or other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use in accordance with R1.2.~~

~~4.4.2 Does not monitor all the applicable items listed in R2.~~

~~4.4.3 Did not have the information specified in R4.~~

~~4.4.4 Does not have monitoring to bring to the attention of operating personnel important deviations in operating conditions and the need for corrective actions as specified in R5.~~

~~4.4.5 No evidence it monitors system frequency. (R7).~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The responsible entity failed to know the status of all generation and transmission resources available for use, even though said information was reported by the Generator Operator, Transmission Operator, or Balancing Authority.
R1.1	N/A	N/A	N/A	The Generator Operator failed to inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
R1.2	N/A	N/A	N/A	The responsible entity failed to inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
R2	N/A	The responsible entity monitors the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, but is not aware of the status of rotating and static reactive resources.	The responsible entity fails to monitor all of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of all rotating and static reactive resources.	The responsible entity fails to monitor any of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

Requirement	Lower	Moderate	High	Severe
R3	The responsible entity failed to provide any of the appropriate technical information concerning protective relays to their operating personnel.	N/A	N/A	The responsible entity failed to provide all of the appropriate technical information concerning protective relays to their operating personnel.
R4	N/A	N/A	The responsible entity has either weather forecasts or past load patterns, available to predict the system’s near-term load pattern, but not both.	The responsible entity failed to have both weather forecasts and past load patterns, available to predict the system’s near-term load pattern.
R5	N/A	N/A	The responsible entity used monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions, but does not have indication of the need for corrective action.	The responsible entity failed to use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions.
R6	N/A	N/A	N/A	The responsible entity failed to use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
R7	N/A	N/A	N/A	The responsible entity failed to monitor system frequency.

**E. Regional ~~Differences~~Variances**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
<u>2</u>		<a href="#">Modified R4</a> <a href="#">Modified M4</a> <a href="#">Modified Data Retention for M4</a> <a href="#">Replaced Levels of Non-compliance with the Feb 28. BOT approved Violation Severity Levels (VSLs)</a>	<a href="#">Revised</a>

**Exhibit B**

Reliability Standard EOP-001-2

(to be substituted for proposed EOP-001-1 in the event FERC approves NERC's  
contemporaneous System Restoration and Blackstart Reliability Standards  
filing before acting on EOP-001-1)



### A. Introduction

1. **Title:** **Emergency Operations Planning**
2. **Number:** EOP-001-2
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Date:** Twenty-four months after the first day of the first calendar quarter following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, all requirements go into effect twenty-four months after Board of Trustees adoption.

### B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- R2. Each Transmission Operator and Balancing Authority shall:
  - R2.1. Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R2.2. Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R2.3. Develop, maintain, and implement a set of plans for load shedding.
- R3. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R3.1. Communications protocols to be used during emergencies.
  - R3.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
  - R3.3. The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
  - R3.4. Staffing levels for the emergency.
- R4. Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.
- R5. The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.

- R6.** The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:
  - R6.1.** The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.
  - R6.2.** The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.
  - R6.3.** The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
  - R6.4.** The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

**C. Measures**

- M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2.** The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

**1.3. Data Retention**

Current plan available at all times.

**1.4. Additional Compliance Information**

Not specified.

## Standard EOP-001-2 — Emergency Operations Planning

### 2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs.  Or 25 to 50% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs.  Or 50% to 75% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs.  Or more than 75% of those agreements do not contain provisions for emergency assistance.
R2	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	N/A	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.
R2.1	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.
R2.2	The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not maintained.	The Transmission Operator or Balancing Authority's transmission system emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for emergencies on the transmission system.

**Standard EOP-001-2 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R2.3	The Transmission Operator or Balancing Authority's load shedding plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.	The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.
R3	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.
R3.1	The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.
R3.2	The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.	N/A	The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.	The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.

**Standard EOP-001-2 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R3.3	The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.
R3.4	The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency	N/A	N/A	N/A
R4	The Transmission Operator and Balancing Authority's emergency plan has complied with 90% or more of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 70% to 90% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with between 50% to 70% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 50% or less of the number of sub-components
R5	The Transmission Operator and Balancing Authority is missing minor program/procedural elements.	The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans	The Transmission Operator and Balancing Authority has failed to annually review two of its emergency plans or communicate with one of it's neighboring Balancing Authorities.	The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with its Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.
R6	The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.

**Standard EOP-001-2 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
R6.1	The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.	N/A	N/A	N/A
R6.2	The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.	N/A	N/A	N/A
R6.3	The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.	N/A	N/A	N/A
R6.4	The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.	N/A	N/A	N/A

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	October 17, 2008	Deleted R2 Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels Corrected typographical errors in BOT approved version of VSLs	Revised
2	To be determined	Removed R2.4 as redundant with EOP-005-2 Requirement R1 for the Transmission Operator; the Balancing Authority does not need a restoration plan.	
2	August 5, 2009	Approved by Board of Trustees	Revised

**Attachment 1-EOP-001-2**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system's own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.



## A. Introduction

1. **Title:** Emergency Operations Planning
2. **Number:** EOP-001-02
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Date:** ~~April 1, 2005~~ Twenty-four months after the first day of the first calendar quarter following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, all requirements go into effect twenty-four months after Board of Trustees adoption.

## B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- ~~R2. The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.~~
- R2. Each Transmission Operator and Balancing Authority shall:
  - R2.1. Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R2.2. Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R2.3. Develop, maintain, and implement a set of plans for load shedding.
- R3. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R3.1. Communications protocols to be used during emergencies.
  - R3.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
  - R3.3. The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
  - R3.4. Staffing levels for the emergency.
- R4. Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

- R5.** The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.
- R6.** The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:
  - R6.1.** The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.
  - R6.2.** The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.
  - R6.3.** The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
  - R6.4.** The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

**C. Measures**

- M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2.** The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

**1.2. Compliance Monitoring Period and Reset ~~Timeframes~~Time Frame**

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

**1.3. Data Retention**

Current plan available at all times.

**1.4. Additional Compliance Information**

Not specified.

Standard EOP-001-0-2 — Emergency Operations Planning

2. Violation Severity Levels:

<u>Requirement</u>	<u>Lower</u>	<u>Moderate</u>	<u>High</u>	<u>Severe</u>
<u>R1</u>	<u>The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.</u>	<u>The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs. Or 25 to 50% of those agreements do not contain provisions for emergency assistance.</u>	<u>The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs. Or 50% to 75% of those agreements do not contain provisions for emergency assistance.</u>	<u>The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs. Or more than 75% of those agreements do not contain provisions for emergency assistance.</u>
<u>R2</u>	<u>The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.</u>	<u>The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.</u>	<u>N/A</u>	<u>The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.</u>
<u>R2.1</u>	<u>The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.</u>	<u>The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.</u>	<u>The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are neither maintained nor implemented.</u>	<u>The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.</u>
<u>R2.2</u>	<u>The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or minor program/procedural elements.</u>	<u>The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not maintained.</u>	<u>The Transmission Operator or Balancing Authority's transmission system emergency plans are neither maintained nor implemented.</u>	<u>The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for emergencies on the transmission system.</u>

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Standard EOP-001-0-2 — Emergency Operations Planning

<u>Requirement</u>	<u>Lower</u>	<u>Moderate</u>	<u>High</u>	<u>Severe</u>
<u>R2.3</u>	<u>The Transmission Operator or Balancing Authority's load shedding plans are missing minor details or minor program/procedural elements.</u>	<u>The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.</u>	<u>The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are neither maintained nor implemented.</u>	<u>The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.</u>
<u>R3</u>	<u>The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.</u>	<u>The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.</u>	<u>The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.</u>	<u>The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.</u>
<u>R3.1</u>	<u>The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.</u>	<u>N/A</u>	<u>N/A</u>	<u>The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.</u>
<u>R3.2</u>	<u>The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.</u>	<u>N/A</u>	<u>The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.</u>	<u>The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.</u>

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Standard EOP-001-0-2 — Emergency Operations Planning

Requirement	Lower	Moderate	High	Severe
<u>R3.3</u>	<u>The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.</u>	<u>N/A</u>	<u>N/A</u>	<u>The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.</u>
<u>R3.4</u>	<u>The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>R4</u>	<u>The Transmission Operator and Balancing Authority's emergency plan has complied with 90% or more of the number of sub-components.</u>	<u>The Transmission Operator and Balancing Authority's emergency plan has complied with 70% to 90% of the number of sub-components.</u>	<u>The Transmission Operator and Balancing Authority's emergency plan has complied with between 50% to 70% of the number of sub-components.</u>	<u>The Transmission Operator and Balancing Authority's emergency plan has complied with 50% or less of the number of sub-components</u>
<u>R5</u>	<u>The Transmission Operator and Balancing Authority is missing minor program/procedural elements.</u>	<u>The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans</u>	<u>The Transmission Operator and Balancing Authority has failed to annually review two of its emergency plans or communicate with one of it's neighboring Balancing Authorities.</u>	<u>The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with its Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.</u>
<u>R6</u>	<u>The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the sub-components.</u>	<u>The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.</u>	<u>The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.</u>	<u>The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.</u>

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Standard EOP-001-0-2 — Emergency Operations Planning

<u>Requirement</u>	<u>Lower</u>	<u>Moderate</u>	<u>High</u>	<u>Severe</u>
<u>R6.1</u>	<u>The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>R6.2</u>	<u>The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>R6.3</u>	<u>The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>R6.4</u>	<u>The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

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**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>	<u>October 17, 2008</u>	<u>Deleted R2</u> <u>Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels</u> <u>Corrected typographical errors in BOT approved version of VSLs</u>	<u>Revised</u>
<u>2</u>	<u>August 5, 2009</u>	<u>Removed R2.4 as redundant with EOP-005-2 Requirement R1 for the Transmission Operator; the Balancing Authority does not need a restoration plan.</u>	<u>Revised</u>
<u>2</u>	<u>August 8, 2009</u>	<u>Adopted by NERC Board of Trustees: August 5, 2009</u>	<u>Revised</u>

Adopted by NERC Board of Trustees: ~~February 8, 2005~~August 5, 2009  
Effective Date: ~~April 1, 2005~~

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**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system's own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

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**Exhibit C**

Standard Drafting Team Roster

## Operate Within IROL Standard Drafting Team Roster

W. Ellis Rankin — Chairman — Director, Transmission System Operations	Oncor Electric Delivery 2233-B Mountain Creek Pkwy Dallas, Texas 75211-6716	(214) 743-6825 (972) 263-6710 Fx ellis-rankin@hotmail.com
Carl J. Bridenbaugh — Director, Energy Delivery, Planning and Protection	FirstEnergy Corp. 76 S. Main Street — 12th Floor Akron, Ohio 44308	(330) 384-3850 bridenbaughc@ firstenergycorp.com
James S. Case — Director, Weekly Operations	Entergy Services, Inc. 6540 Watkins Drive Jackson, Mississippi 39213	(601) 985-2345 (870) 541-3964 Fx JCASE@entergy.com
Albert DiCaprio — Strategist	PJM Interconnection, L.L.C. 955 Jefferson Avenue Valley Forge Corporate Center Norristown, Pennsylvania 19403-2497	(610) 666-8854 (610) 666-4282 Fx dicapram@pjm.com
William Hardy	Southern Company Services, Inc. 600 18th Street North — PCC PCC-Corp HQ Birmingham, Alabama 35203-2206	(205) 257-7073 wmhardy@southernco.com
Anthony Jankowski — Manager, Electric System Operations	We Energies W237 N1500 Busse Road Waukesha, Wisconsin 53188	(262) 544-7117 (262) 544-7099 Fx tony.jankowski@we-energies.com
Wendy Ladd — System Coordinator	Duke Energy Carolina 526 S. Church Street — Mail Code EC02B Charlotte, North Carolina 28201-1006	(704) 382-6940 (704) 373-3500 Fx wendy.ladd@duke-energy.com
Seamus McGovern — Reliability Coordination Services/System Operations	ISO New England, Inc. One Sullivan Road Holyoke, Massachusetts 01040-2841	(413) 535-4364 jmcmcgovern@iso-ne.com
Allan D. Miller — Senior Technical Officer, Customer Support	Independent Electricity System Operator Postal Station A — Box 4474 Toronto, Ontario M5W 4E5	(905) 855-6158 (905) 855-6319 Fx al.miller@ieso.ca
James Murphy — Electrical Engineer	Bonneville Power Administration 5411 Hwy 99 Vancouver, Washington 98666	360-418-2413 jpmurphy@bpa.gov
H. Steven Myers — Manager of Operating Standards	Electric Reliability Council of Texas, Inc. 2705 West Lake Drive Taylor, Texas 76574-2136	(512) 248-3077 (512) 248-3055 Fx smyers@ercot.com

Dwayne Stradford	American Electric Power 1 Riverside Plaza—AEPHQ-4th Floor Columbus, Ohio 43215	(614) 716-6680 dstradford@aep.com
Stephen Crutchfield — NERC Standards Development Coordinator	North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721	(609) 452-8060 (609) 452-9550 Fx stephen.crutchfield@nerc.net
Maureen E. Long — NERC Standards Process Manager	North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721	(609) 452-8060 (609) 452-9550 Fx maureen.long@nerc.net
Edward H Ruck — NERC Senior Compliance Investigator	North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540-5721	(609) 452-8060 (609) 452-9550 Fx ed.ruck@nerc.net

## **Exhibit D**

### **Record of Development of Proposed Reliability Standards**

## Standard Authorization Request (SAR) Form

Title of Proposed Standard:	Operate Within Limits - Monitor and Assess Short-term Transmission
Request Date:	March 7, 2002
Authorized for Posting:	March 20, 2002
SAR ID# :	OPER_WITHN_LMTS_01_01

SAR Requestor Information		SAR Type (Put an 'x' in front of one of these selections)	
Name:	Jim Byrd	X	New Standard
Primary Contact:	Jim Byrd		Revision to existing Standard
Telephone:	214-743-6870		Withdrawal of existing Standard
Fax:	972-263-6710		
e-mail:	jbyrd@txu.com		Emergency Action

### Purpose/Industry Need (Provide one or two sentences)

To establish a standard that requires the bulk electric transmission system be operated within established limits.

### Brief Description (A few sentences or a paragraph) Provide enough detail so that an independent entity familiar with the industry could draft a Standard based on this description.)

Establish a standard that requires adherence to operating limits. Requirements shall include items such as real time monitoring of system parameters against operating limits, correcting limit violations, performing short-term (e.g., next-day) and real-time transmission reliability analyses, etc.

**SAR: Operate Within Limits - Monitor and Assess Short-term Transmission Reliability**

**Reliability Functions**

<b>The Standard will Apply to the Following Functions (Put an 'X' in front of each one that applies)</b>		
X	Reliability Authority	Ensures the reliability of the bulk transmission system within its Security Authority Area. This is the highest reliability authority.
X	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
	Interchange Authority	Authorizes valid and balanced Interchange Schedules
	Planning Authority	Plans the bulk electric system
	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
	Transmission Owner	Owns transmission facilities
X	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
	Distribution Provider	Provides and operates the "wires" between the transmission system and the customer
	Generator	Owns and operates generation unit(s) or runs a market for generation products that performs the functions of supplying energy and Interconnected Operations Services
	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required.
	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

**SAR: Operate Within Limits - Monitor and Assess Short-term Transmission Reliability**

**Reliability and Market Interface Principles**

<b>Applicable Reliability Principles (Put an 'x' in front of all that apply)</b>	
X	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions.
X	2. The frequency of interconnected bulk electric systems shall be controlled within defined limits through the balancing of electric supply and demand
X	3. Information necessary for planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably
	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented
X	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems
X	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions
X	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b>	
<i>(Enter 'yes' or 'no')</i>	
	Yes
1.	Interconnected The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy
2.	An Organization Standard shall not give any market participant an unfair competitive advantage
3.	An Organization Standard shall neither mandate nor prohibit any specific market structure
4.	An Organization Standard shall not preclude market solutions to achieving compliance with that Standard
5.	An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards

## Operate Within Limits – Monitor and Assess Short-term Transmission

<i>SAR Commenter Information</i>			
Name	David H. McMillan		
Organization Calpine			
Telephone	713-830-8710	Fax	713-830-2001
E-mail	dmcmillan@calpine.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			
<input checked="" type="checkbox"/> The scope of the SAR should be expanded to include:			
Applicable Functions: Interchange Authority should be checked because of the definition of "Interchange Schedule" in NERC Operating Policy 3, since schedule implies the actual implemented energy flow. The term "operating limits" is used in this SAR as in the "Determine Facility Ratings" SAR. Please see our comments concerning OSL/OSLV for that SAR and ensure that terms are consistent and defined appropriately.			
There should be a companion SAR to this that requires LSEs, distribution providers, and generators to respond to requests that will have the effect of operating the system within Operating Limits.			
Applicability should not be limited to the Reliability Authority, Balancing Authority and Transmission Operator, but should include all operational entities (if you are operating, you have to stay within your defined limits).			
Sufficient detail to provide a clear understanding of the specific functions covered by this SAR.			
<input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate:			



<i>SAR Commenter Information</i>			
Name	Bill Carr		
Organization Dynegy, Inc.			
Telephone	713-7657-8723	Fax	713-767-5986
E-mail	bill.carr@dynegy.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments: The purpose/industry need section should start with: The purpose of this standard is to ensure that a consistent, uniformly applied standard is developed for ...			

<i>SAR Commenter Information</i>			
Name	John Anderson and John Hughes		
Organization	Electricity Consumers Resource Council (ELCON)		
Telephone	202-682-1390	Fax	202-289-6370
E-mail	jhughes@elcon.org/janderson@elcon.org		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate: The establishment of this SAR is premature. All commercial implications of the SAR should be identified and mitigated prior to the drafting.			

<i>SAR Commenter Information</i>			
Name	Phil Park		
Organization Powerex			
Telephone	604 891 5020	Fax	604 895 7012
E-mail	phil.park@powerex.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate: The item in the Description which states "Do not allow an over-subscription of transfer capability" addresses a business practice and should be eliminated.			

<i>SAR Commenter Information</i>			
Name	MAAC Region		
Organization	MAAC		
Telephone	610-666-8854	Fax	610-666-2297
E-mail	dicapram@pjm.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments:			
The primary comment here is that there is a need to agree on terms and definitions. A clear distinction must be made between the violation of a limit that has no impact on the operation of the interconnected system, and the violation of a limit that threatens the security of the interconnected system.			

<i>SAR Commenter Information</i>	
Name	Mike Miller
Organization	Southern Company
Telephone	205 257 7755
Fax	6663
E-mail	mbmiller@southernco.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be expanded to include: See comments below</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: Applicable Functions: Interchange Authority should be checked because of the definition of "Interchange Schedule" in NERC Operating Policy 3, since schedule implies the actual implemented energy flow. The "Assess Transmission future needs and develop transmission plans" SAR does not state a requirement to plan the system so that it can be operated within Operating Limits, therefore, we feel that the Planning Authority should be checked as applicable for this SAR.</p> <p>The term "operating limits" is used in this SAR as in the "Determine Facility Ratings" SAR. Please see our comments concerning OSL/OSLV for that SAR and ensure that terms are consistent and defined appropriately.</p> <p>Please note that there should be a companion SAR to this that requires LSEs, distribution providers, and generators to respond to requests that will have the effect of operating the system within Operating Limits.</p>	

*SAR Commenter Information*

Name Alan Johnson

Organization Mirant Americas Energy Marketing

Telephone 678-579-3108

Fax 678-579-5760

E-mail [alan.r.johnson@mirant.com](mailto:alan.r.johnson@mirant.com)

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

April 23, 2002

SRP Comments on NERC 11 SAR sent out on April 2, 2002.

All 11 SAR's (this group of 10 plus the one sent out earlier) don't contain enough information to make the kind of judgments requested on the forms. Therefore the forms are not filled out.

We recommend all the SAR's be advanced to the next step to develop the specific standards and associated measurements for each standard so that we can evaluate and comment on them.

All of these SAR's are needed for reliable planning and operation of the bulk electric transmission system and meet the principle requirements.

Comments on the White paper:

1. The paper fails to state what standards are supposed to be. This seems so basic; one has to assume that those drafting the white paper want to redefine the definition contained in the Organizational Standards Manual. This leads to a lot of confusion and is not the place to do that.
2. The Planning Standards were written in a different time period than the Operating Policies with different objectives. Thus they are different and that should be recognized. For instance the development of a Planning Functional model has absolutely nothing to do with whether control areas exist or not and whether companies have restructured or not. The statement about control areas may be true for the Operating Policies but it is not true for the Planning Standards.

The Planning Standards (Templates) were written to meet the definition of a standard in the Organizational Standards Manual, to meet at least one of the Reliability Principles, to comply with all the Market Interface Principles and to contain the compliance administration elements. This is very different than what is contained in the Operating Policies. The Planning Standards need to go through the new process so that both the Operating elements and Planning elements of the Organizational Standards are consistent, are not duplicative and are needed for reliability.

3. The term "core reliability requirement" is used in the white paper but is never mentioned in the Organizational Standards Manual. Using an undefined term is very misleading and should be avoided.
4. The paper in several places address "what performance must be achieved". As noted above, an Organizational Standard can be broader than that and this write up is misleading.
5. The process has been lengthened because of the multiple posting of the SAR's. NERC has a body of reliability requirements written up into Compliance Templates. With very little effort these could be written up into SAR's that would provide sufficient detail for NERC to evaluate them. It is very hard to comprehend why one does not use this work to expedite the process. Instead SAR's are sent out with insufficient information. The process is long enough. We should be looking for all ways possible to speed it up.

Comments on the SAR write-up:

1. The SAR write-up only contains the purpose and brief description of a standard. Where is the Standard? I thought that is what the SAR is for?
2. The descriptions are in most cases extremely vague. The write-ups contain words like "such as" or "as defined in the standard". These are big enough to cover a MAC truck. Once again there is insufficient information to make a good judgment.



April 29, 2002

Guy V. Zito  
Manager, Planning  
Northeast Power Coordinating Council  
1515 Broadway Floor 43  
New York, NY 10036

RE: NEPOOL Compliance Working Group (NCWG) comments pertaining to the 10 Standard Authorization Requests (SARs) posted for open comment

The NCWG has reviewed the 10 SARs posted for open comment and has agreed they are core standards, which serve a purpose in support of reliability.

Standard Title:

Prepare for and Respond to Abnormal or Emergency Conditions  
Prepare for and Respond to Blackout or Island Conditions  
Coordinate Interchange  
Coordinate Operations  
Monitor and Analyze Disturbances, Events and Conditions  
Operate Within Limits – Monitor and Assess Short-term Transmission  
Define (Physical) Connection Requirements  
Design, Install, and Coordinate Control Protection Systems  
Assess Transmission Future Needs and Develop Transmission Plans  
Determine Facility Ratings, Operating Limits, and Transfer Capabilities

We do not agree that the **SAR Type** is a new standard. We suggest that at a minimum the SAR should indicate the existing standard and whether or not it will be withdrawn when the revised standard is adopted. We suggest that NERC stop the open process of reviewing existing policies and standards if these Organizational Standards will replace them. NERC should clearly indicate that one purpose of the Organizational Standards Process is to replace existing standards.

Sincerely,  
Daniel L. Stosick

Chairman, NEPOOL Compliance Working Group  
C/o ISO New England, Inc.  
One Sullivan Road  
Holyoke MA 01040-2841

Cc: NEPOOL Compliance Working Group  
CP9 Working Group  
Paul Shortly  
Richard Burke  
Richard Kowalski



*SAR Commenter Information*

Name Robert D. Smith

Organization Arizona Public Service

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Fax (602) 250-1155

E-mail robert.smith@aps.com

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

<i>SAR Commenter Information</i>	
Name	Mr. Charles Moser (Northborough, MA) and Mr. Ronald Halsey (Syracuse, NY)
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Fax	508 421 7520 315 428 5615
E-mail	charles.moser@us.ngrid.com ronald.halsey@us.ngrid.com
None	

<i>SAR Commenter Information</i>			
Name	Vern Colbert		
Organization	Dominion Virginia Power		
Telephone	(804) 273-3399	Fax	(804) 273-2405
E-mail	vern_colbert@dom.com		

*SAR Commenter Information*

Name Greg Gideon

Organization TXU Energy

Telephone 214-875-9483

Fax 214-875-9246

e-mail [ggideon1@txu.com](mailto:ggideon1@txu.com)

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

<i>SAR Commenter Information</i>			
Name	Paul Rocha		
Organization	Reliant Energy HL&P		
Telephone	713-207-2768	Fax	713-207-2281
e-mail	<a href="mailto:paul-rocha@reliantenergy.com">paul-rocha@reliantenergy.com</a>		
HL&P is uncertain whether a meaningful standard can be developed in this area. There are likely to be different requirements for different types of transmission systems. For a larger, more complicated system, more extensive short-term assessments are likely to be more justified than for smaller systems.			

<i>SAR Commenter Information</i>			
Name	Brant Eldridge		
Organization	ECAR		
Telephone	330-580-8005	Fax	330-456-3648
E-mail	<a href="mailto:brante@ecar.org">brante@ecar.org</a>		
<p>ECAR has conducted a survey of its member companies regarding the eleven SARs, which NERC has initiated to-date. We recognize that the comment period for the first SAR issued ("Balance Resources and Demand") has already closed. However, considering that the first SAR was issued earlier than the other ten primarily just to get the process started, and further considering that all 11 SARs are viewed by NERC as a possible complete set of Organization Standards (re: the "White Paper"), ECAR believes that comments on the first SAR should still be considered along with those on the other ten.</p> <p>11 of the 18 ECAR Full Members, along with two Associate Members, submitted responses to the SAR survey. Some of the responses were submitted using the NERC "SAR Comment Form", while others were contained in narrative e-mails, and one was faxed to us. Therefore, a complete set of the ECAR member company responses will be sent to the Standards Process Manager at NERC via Fed Ex to arrive at NERC by May 3rd. The Fed Ex package will include a copy of this e-mail. FYI, NERC may also receive some of the ECAR member company responses directly from the companies. Some of the individual company responses will be identical to what will be in the Fed Ex package and some will contain more detailed comments.</p> <p>The ECAR member company responses contain numerous and wide-ranging comments about the need for each of the 11 proposed Organization Standards, as well as comments regarding the scope and applicability of the SARs. As your review of these responses will show, there is general ECAR consensus – but not unanimity -- that the 11 SARs as a set cover the scope of performance needed to ensure reliability of the interconnected North American bulk power systems. Some ECAR members feel that there are performance areas not covered in the proposed set of Organization Standards, and they have provided what they think is missing. Others believe that some of the proposed Organization Standards are not needed, and they explain why they feel that way. Numerous comments were directed at the scope and applicability of the SARs. Several ECAR companies questioned the inclusion of the "Distribution Provider" function in the applicability section of the SARs, believing that NERC should stick to its traditional focus on the bulk power systems and stay out of the distribution arena.</p> <p>The recent call for nominees to serve on SAR Drafting Teams is the appropriate next step. ECAR believes that all 11 SARs need to be refined to reflect industry comments and then posted again for another round of industry comments. Before proceeding into actual development of Organization Standards based on these 11 SARs, NERC must have clear industry consensus on the need for each of the Organization Standards outlined in the 11 SARs, as well as consensus on the scope and applicability of those SARs.</p> <p>If the wide-ranging comments received from ECAR members are any indication, there is still some serious work to be done to achieve the needed clear industry consensus on how to proceed.</p>			

### **East Kentucky Power Cooperative**

EKPC believes our present standards are adequate and therefore is not in favor of developing a new set of standards. We also believe the new process should be revised to provide for a screening committee to evaluate proposed standards before they are presented to all NERC members for comment. However, given that we are going to develop new standards with this process, EKPC endorses all eleven of the SARs.

### **LG&E Energy**

LG&E agrees there is a need for the eleven proposed organization standards. However, we do see a disconnect with their development and operating procedures/protocols of RTO's. Where will this coordination take place to ensure consistency, eliminate redundancy, and application particularly since there will most likely be more than 1 RTO at the time of issuance?

## **VECTRON – Southern Indiana Gas & Electric**

The NERC Proposed Organization Standards appear to me to cover the scope of performance needed to insure reliability of the interconnected grid. The scope of the SARs as proposed, also, look fine to me.

## **Dayton Power & Light**

We are okay with the 11 proposed Standards.

## **Consumers Energy**

Consumers Energy opposes all 10 of the SARs on their present form. We understand that it is too late to vote on the 11th SAR.

The concern that we have is that there is only limited ability to prevent new requirements from being incorporated with the old, standard reliability requirements. The SAR descriptions sound good because they espouse the old, tried and true reliability concepts that we have known and loved from the past. If there was an effective way to limit the resulting practices to those traditional values, I would be the first to support them. Unfortunately, we are not voting here on codification of the current practices. We, instead, are voting to develop a set of practices that will include the currently unknown and possibly oppressive, unacceptable set of future requirements. This vote has nothing to do with the tried and true practices from the past. Its about accepting an unknown set of requirements on faith and trust ... that none of the practice developers will be out to do us harm.

The standard argument here is that the SARs are only scope setting documents and that we will still have a change to shape and to vote on the actual standards when they go through the final approval stage. If we believe this argument, we are totally ignoring the lessons from the past. There is no guarantee that ECAR will have any personnel involved in the development of the final practices. It is unclear how many people will be involved in the drafting of the practices nor how they will be selected.

The biggest single concern is what the final product will look like and how it will be voted on. I would make a modest wager that it will consist of a handful of standard practices that we all could accept (and in fact would insist upon) along with three practices that are new and totally unacceptable. We will be faced with the proposition that we must vote on the "package" of practices where we must accept the bad ones to get the good ones. I can find no reference to a line item voting procedure.

The solution to this problem is to suggest a provision in all ten SARs that the final package of practices will not include any policies that are not already in the NERC approved set of policies and standards. Consumers Energy could then support all ten SARs.

## **Duquesne**

Operate Within Limits – Monitor & Assess – Inappropriate as a stand alone SAR, but should be incorporated with SAR #8. Coordinated operations are required to ensure limits are not violated.

<i>SAR Commenter Information</i>			
Name	David L. Hart		
Organization Ohio Valley Electric Corporation			
Telephone	614/223-1090	Fax	614/223-1094
E-mail	dlhart3@aep.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			



<i>SAR Commenter Information</i>			
Name	Lew Gray, Mike Holtsclaw, Steve Clouse		
Organization	Indianapolis Power & Light		
Telephone	317-261-8126	Fax	317-261-8996
E-mail	<a href="mailto:lew.gray@aes.com">lew.gray@aes.com</a>		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			

<i>SAR Commenter Information</i>			
Name	David W. Sandefur		
Organization	Hoosier Energy REC, Inc.		
Telephone	812-876-0267	Fax	812-876-3139
E-mail	<a href="mailto:dsandefur@hepn.com">dsandefur@hepn.com</a>		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			

<i>SAR Commenter Information</i>	
Name	Verne B. Ingersoll, II
Organization	Progress Energy - Carolina Power & Light Company and Florida Power Corp.
Telephone	919-546-7534
Fax	919-546-7558
E-mail	verne.ingersoll@pgnmail.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be expanded to include:</p> <p>Applicable Functions: Interchange Authority should be checked because of the definition of "Interchange Schedule" in NERC Operating Policy 3, since schedule implies the actual implemented energy flow. The term "operating limits" is used in this SAR as in the "Determine Facility Ratings" SAR. Please see our comments concerning OSL/OSLV for that SAR and ensure that terms are consistent and defined appropriately.</p> <p>There should be a companion SAR to this that requires LSEs, distribution providers, and generators to respond to requests that will have the effect of operating the system within Operating Limits. Applicability should not be limited to the Reliability Authority, Balancing Authority and Transmission Operator, but should include all operational entities (if you are operating, you have to stay within your defined limits).</p> <p>Sufficient detail to provide a clear understanding of the specific functions covered by this SAR.</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p>	

<i>SAR Commenter Information</i>	
Name	Charles Yeung
Organization	Reliant Resources
Telephone	713-207-2935
	Fax
E-mail	cyeung@reliant.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input type="checkbox"/> The scope of the SAR should be expanded to include:</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate: procedures on how to curtail transactions and generation schedules to achieve the reliability objectives stated.</p> <p>Other comments: The existing NERC standard Policy 9, includes a procedure known as "TLR" that must be compliant with FERC tariff obligations to curtail transactions. A core reliability standard should only define the limits and conditions required to achieve a reliable and secure transmission system and allow for market-driven procedures to provide tools for the operators to employ to achieve the core reliability requirements. Further, FERC's upcoming Standard Market Design NOPR will entail new congestion management rules for TPs to adhere to. Procedures for transaction curtailment should be developed with the NAESB process and filed at FERC for approval.</p>	

*SAR Commenter Information*

Name Kirit S. Shah

Organization Ameren Services -Energy Delivery Technical Services

Telephone 314 554 3542

Fax 314 554 3260

E-mail kirit\_s\_shah@ameren.com

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

Other comments: The scope is too general. Would this standard cover operation beyond first-contingency?

<i>SAR Commenter Information</i>			
Name	Dan Wheeler		
Organization	NorthWestern Energy		
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E-mail	dan.wheeler@northwestern.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			

<i>SAR Commenter Information</i>			
Name	John K. Loftis, Jr.		
Organization	Dominion Virginia Power		
Telephone	804 - 273 - 3897	Fax	804 - 273 - 3259
E-mail	john_loftis@dom.com		
Other comments: I do not work in this area, and have no comments on this SAR			

<i>SAR Commenter Information</i>			
Name	Terri Grabiak		
Organization Allegheny Power			
Telephone	724-838-6748	Fax	724-838-6156
E-mail	tgrabia@alleghenypower.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			



<i>SAR Commenter Information</i>	
Name	George Bartlett
Organization	Entergy Services
Telephone	504-310-5801
Fax	
E-mail	gbartle@entergy.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be expanded to include: See Other Comments.</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: We agree this SAR should be a "core reliability" Organization Standard but suggest the title be revised to "Operate Within Thermal, Voltage and Stability Limits".</p> <p>The industry should:</p> <p>Develop the criteria for this core reliability Organization Standard,</p> <p>Establish measures for measuring conformance to the criteria, and</p> <p>Monitor for conformance to the criteria.</p> <p>The Organization Standard should include the requirements that appropriate entities:</p> <p>Establish thermal, voltage and stability limits for all appropriate facilities and operating conditions,</p> <p>The system be operated to respect those limits,</p> <p>Measures be developed to assure conformance</p> <p>The Organization Standard should not establish "how" one develops these limits, "how" one operates to meet the limits, "how" one monitors for criteria violations, or "how" one corrects limit violations, or the details of "how" to measure, data warehouse, or "how" to protect against operation outside of the limits.</p>	

<i>SAR Commenter Information</i>			
Name	Michael Desselle		
Organization	American Electric Power		
Telephone	214-777-1826	Fax	214-777-1831
E-mail	mddesselle@aep.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments: To the extent that this SAR is transitioning an existing standard from the old world to the new world (Functional Model), then the standard should not go beyond the original scope. Consistent with our general comments, once the clarity is achieved on Standard Market Design and RTO formations, then this standard should be revisited and reevaluated.			
Additionally, the "Purpose/Industry Need" statement should be rewritten to be more specific as follows: "To establish a standard that requires the bulk electric transmission system be monitored and operated within established thermal, voltage and stability limits".			

<i>SAR Commenter Information</i>			
Name	Ed Kirschner		
Organization Cinergy			
Telephone	317-838-1455	Fax	317-838-6846
E-mail	ekirschner@cinergy.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate: Should concentrate on performance instead of procedures such as performing day ahead analysis. An entity could perform day ahead analysis but if no action is taken as a result of the analysis then what good is it?			
Other comments: Process and procedures for performing analysis should be part of the certification process and not a standard that has measurement requirements.			

<i>SAR Commenter Information</i>			
Name	Jim Griffith		
Organization	Bulk Power Operations Southern Company		
Telephone	205-257-6892	Fax	205-257-6663
E-mail	jsgriffi@southernco.com		
None			

<i>SAR Commenter Information</i>	
Name	Peter Burke (submitting comments provided by numerous ATC contributors)
Organization	American Transmission Company
Telephone	262-506-6863
Fax	262-506-6709
E-mail	PBurke@atcllc.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be expanded to include: Redispatch issues. Redispatch is one of the tools the transmission operator will use to make sure the system is operated within the limits. Therefore, the "generation operator" reliability function should also apply since they will need to take direction from the Transmission Operator and/or Reliability Authority.</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: Would it be appropriate to include comments about operating guides in this standard instead of my comments in the proposed standard to "Determine Facility Ratings, Operating Limits, and Transfer Capabilities?" The transmission operator and Reliability Authority should have some discretion in operating within established limits. I.E. if a line is at it's OSL but the OSL limit was based on summer ratings and it is cool outside, the transmission operator shouldn't be forced into some remedial action.</p>	

*SAR Commenter Information*

Name Bob Pierce

Organization Duke Power

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Fax (704) 382-7887

E-mail rwpierce@duke-energy.com

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

<i>SAR Commenter Information</i>	
Name	David Little
Organization	Nova Scotia Power Inc.
Telephone	902 428-7580
Fax	902 428-7550
E-mail	<a href="mailto:david.little@nspower.ca">david.little@nspower.ca</a>
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?  Yes</p> <p>Is the Scope of the SAR fine as it is?  No</p> <p>Other Comments  The scope is too broad as stated in the description section of the SAR. More detail is required.  Specifying "real time monitoring" and "next-day analysis" crosses into the "how to do it" arena. The standard should simply state the desired results.</p>	

<i>SAR Commenter Information</i>			
Name	Art Giardino		
Organization	Public Service Electric & Gas		
Telephone	973 430-6374	Fax	973 242-6074
E-mail	arthur.giardino@pseg.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments: It is premature to continue development of this SAR until FERC has specified the organization to be responsible for the development of wholesale electric standards.			



<i>SAR Commenter Information</i>	
Name	SERC Compliance Subcommittee
Organization	SERC (Contact = Nancy Fallon)
Telephone	704-892-6026
	Fax
E-mail	nfallon@serc1.org
Is there a reliability-related need for an Organization Standard to be developed on this topic?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is	
<input checked="" type="checkbox"/> The scope of the SAR should be expanded to include: sufficient detail to provide a clear understanding of the specific functions covered by this SAR.	
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:	
Other comments: Applicability should not be limited to the Reliability Authority, Balancing Authority and Transmission Operator, but should include all operational entities (if you are operating, you have to stay within your defined limits).	

<i>SAR Commenter Information</i>	
Name	SERC OPWG
Organization	SERC (Contact = Nancy Fallon)
Telephone	704-892-6026
	Fax
E-mail	nfallon@serc1.org
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be expanded to include: See comments below</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: Applicable Functions: Interchange Authority should be checked because of the definition of "Interchange Schedule" in NERC Operating Policy 3, since schedule implies the actual implemented energy flow. The "Assess Transmission future needs and develop transmission plans" SAR does not state a requirement to plan the system so that it can be operated within Operating Limits, therefore, we feel that the Planning Authority should be checked as applicable for this SAR.</p> <p>The term "operating limits" is used in this SAR as in the "Determine Facility Ratings" SAR. Please see our comments concerning OSL/OSLV for that SAR and ensure that terms are consistent and defined appropriately.</p> <p>Please note that there should be a companion SAR to this that requires LSEs, distribution providers, and generators to respond to requests that will have the effect of operating the system within Operating Limits.</p>	

*SAR Commenter Information*

Name [Gary Won and Don Tench](#)  
[Comments submitted on behalf of the Independent Electricity Market Operator \(IMO\)](#)

Organization [Independent Electricity Market Operator \(IMO\)](#)

Telephone [905-855-6427](#)

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E-mail [gary.won@theimo.com](mailto:gary.won@theimo.com) and [don.tench@theimo.com](mailto:don.tench@theimo.com)

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

Other comments:

1. The word "Reliability" is missing from the title of the proposed standard.
2. The title and brief description of the proposed standard refer to "Transmission Reliability". This may be misleading and may imply that the new standard would apply to the transmission function only. The standard should address the reliability of the bulk electric system.
3. Various terms for bulk electric system have been used, e.g. "bulk electric transmission system" (Purpose/Industry Need), "bulk transmission system" (Reliability Function) and the "interconnected bulk electric systems" or "bulk electric systems" (Reliability and Market Interface Principles). The terminology should be standardized and consistent.
4. Considering the idea of the NERC White Paper that the description for each proposed standard should identify WHAT performance must be achieved, rather than detailing HOW to achieve that performance, the title of this SAR could be simplified to focus on the "Operating Within Limits".

<i>SAR Commenter Information</i>	
Name	David Scarpignato
Organization	Baltimore Gas & Electric
Telephone	410-597-7593
	Fax
E-mail	scarp@bge.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input type="checkbox"/> The scope of the SAR should be expanded to include:</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: The promulgation for comment of these SARs is premature. The industry "standard making process" is in a transition phase and it is overly burdensome to devote resources at this time. Once legislation or FERC firmly determines which entity(ies) is responsible for standards it will make sense to move forward with said entity.</p> <p>Even if NERC wants to cover reliability standards, almost all standards have a reliability and commercial impact; thereby, necessitating developing a single process that incorporates both commercial and reliability aspects of standards development. The current NERC process risks being changed soon, discounts commercial aspects, and is not part of a finalized overall industry process.</p> <p>Waiting a short while to move forward on a new standards setting process is acceptable and prudent given that NERC standards are currently in place and the industry can continue to use these standards until the new process and standards setting organization(s) are firmly set.</p>	

*SAR Commenter Information*

Name R. Scott Henry, Chairman

Organization Interconnected Operations Services Subcommittee, NERC

Telephone (704) 382-6182

Fax

E-mail rshenry@duke-energy.com

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

*SAR Commenter Information*

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

<i>SAR Commenter Information</i>	
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Organization	Kent Saathoff
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<b>Comments</b>	
<p>This SAR and the other posted SARs provide an appropriate framework for transitioning existing NERC Operating Policies and Planning Standards into new, NERC Organization Standards. Multiple compliance measures may be defined and developed for each of the eleven proposed Organization Standards. The Organization Standards and related compliance measures should focus on what functions must be performed for reliability, on who is responsible for each compliance measure for each required function and not, on how the compliance measure is achieved. The compliance measure must be measurable or demonstrable to ensure compliance.</p> <p>Adherence to transmission system operating limits is a core reliability requirement and should be addressed by a Standard. Requirements for monitoring real time loading against operating limits and compliance measures for determining those limits are certainly appropriate.</p> <p>Compliance measures for correcting limit violations must make allowance for the various mechanisms in place and being developed to provide market solutions to remedy transmission congestion. These mechanisms are very different from the old "command and control" procedures that are the basis of existing NERC policies. All standards must be crafted to allow market solutions to work while still maintaining system reliability.</p>	

<i>SAR Commenter Information</i>			
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments: The use of the term "etc." in the SAR description leaves the scope of this SAR open-ended. The scope of the SAR should be stated and complete.			



*SAR Commenter Information*

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Organization Exelon Corporation

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate: The procedures on how to alleviate overloads (i.e., TLRs) and other limit violation.

<i>SAR Commenter Information</i>			
Name	Carter B. Edge		
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments: Planning Authority should be included.			

<i>SAR Commenter Information</i>			
Name	Warren Schaefer		
Organization	Dairyland Power Cooperative		
Telephone	608/787-1252	Fax	608/787/1327
E-mail	wjs@dairynet.com		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments: The use of the term "etc." in the SAR description leaves the scope of this SAR open-ended. The scope of the SAR should be stated and complete.			

<i>SAR Commenter Information</i>	
Name	Mike Miller
Organization	Southern Company
Telephone	205 257 7755
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E-mail	mbmiller@southernco.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be expanded to include: See comments below</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: Applicable Functions: Interchange Authority should be checked because of the definition of "Interchange Schedule" in NERC Operating Policy 3, since schedule implies the actual implemented energy flow. The "Assess Transmission future needs and develop transmission plans" SAR does not state a requirement to plan the system so that it can be operated within Operating Limits, therefore, we feel that the Planning Authority should be checked as applicable for this SAR.</p> <p>The term "operating limits" is used in this SAR as in the "Determine Facility Ratings" SAR. Please see our comments concerning OSL/OSLV for that SAR and ensure that terms are consistent and defined appropriately.</p> <p>Please note that there should be a companion SAR to this that requires LSEs, distribution providers, and generators to respond to requests that will have the effect of operating the system within Operating Limits.</p>	

<i>SAR Commenter Information</i>			
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			

*SAR Commenter Information*

Name Jon. Loesch

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate: the responsibility of the Balancing Authority, which has no bearing on this standard/objective.

<i>SAR Commenter Information</i>	
Name	Ray Morella
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E-mail	morellar@firstenergycorp.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input type="checkbox"/> The scope of the SAR should be expanded to include:</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: One of the major problems confronting the industry today is in the identification of real-time system limits and operating conditions. Viable communications protocol need to be developed and implemented that will correctly monitor and assess the electric system in a real-time mode. Establishment of a dynamic and valid real-time data system that will accurately depict system conditions will further enable our industry to maximize its potential. We must be able to define short term system requirements and operational limits in such a manner as to promote the efficient and reliable use of the transmission grid. Partial path reservations and also real-time modifications of transmission scheduling need to be addressed in a more accurate manner. The accuracy and timely assessment of current operating limits need to be reviewed, studied, and validated in a sequence that will not inhibit the real-time operations of the system. The development of established limits, and the assessment and comparison of those limits in a real-time environment, will insure that transmission operations will be able to react to the current use that is imposed on the system in a reliable and safe manner.</p>	

<i>SAR Commenter Information</i>			
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			



*SAR Commenter Information*

Name Kenneth A. Githens

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The scope of the SAR should be reduced to eliminate: Today short-term transmission reliability issues are addressed by congestion management either thru TLR curtailments, LMP or other methods. FERC's proposed SMD requires congestion management in all markets using LMP. Congestion management is a market issue. Therefore, this standard should be developed in a process which takes into account market and reliability interests.

<i>SAR Commenter Information</i>			
Name	Chifong Thomas		
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E-mail	<a href="mailto:clt7@pge.com">clt7@pge.com</a>		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			

<i>SAR Commenter Information</i>			
Name	Ed Riley		
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate: Change title to " Monitor Transmission Reliability - Operate within Limits". SAR should be re-written to say "Establish a standard that requires adherence to operating limits. Requirements shall include items such as monitoring of system parameters against operating limits, and correcting limit violations".			

<i>SAR Commenter Information</i>			
Name	Marv Landauer		
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E-mail	mjlandauer@bpa.gov		
Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input type="checkbox"/> The scope of the SAR should be reduced to eliminate:			
Other comments: Will the standards used here to determine if the system is operated within limits be the same standards that will be used to plan the system?			

<i>SAR Commenter Information</i>	
Name	Francis J Halpin
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E-mail	fjhalpin@BPA
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input type="checkbox"/> The scope of the SAR should be expanded to include:</p> <p><input type="checkbox"/> The scope of the SAR should be reduced to eliminate:</p> <p>Other comments: Change to: prevent and correct limit violations. Add Generator and LSE to the list of Functions to which this standard would apply. Load dropping can be used as a tool to prevent and correct violations. Generation is critical in the areas of Reactive, Voltage, Frequency, and Reserves. Generators are used extensively in preventing and correcting limit violations.</p>	

<i>SAR Commenter Information</i>	
Name	Edward Stoneburg
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<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input type="checkbox"/> The scope of the SAR should be expanded to include:</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate: Balancing Authority: In reviewing a Balancing Authorities responsibilities, it does not appear to Illinois Power that the BA has any responsibility to Monitor and Assess Short-term Transmission Reliability, and therefore would not be subject to this Standard. Eliminate all references to HOW this standard would be met such as real time monitoring, data, communications, particular analysis, and timing. These tend to be issues as to HOW to achieve the standard not what the standard should be.</p> <p>Other comments: The SAR indicates that this standard would apply to Generators and Distribution Providers. Today NERC Policy and Standards do not apply to these Functions. For example, NERC has no authority to require its standards to be applied to determine connection requirements for distribution facilities. And the application of NERC standards to Independent Generators are carried out by transmission owners through interconnection agreements. Is NERC proposing that this will change and they will begin to impose standards directly on distribution providers and generators?</p> <p>There is inadequate detail in the SAR to determine if the scope of the SAR is appropriate and adequate. The scope should not include and requirements on HOW to deal with the prevention or correction of limit violations.</p>	

<i>SAR Commenter Information</i>			
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			

*SAR Commenter Information*

Name Gerald N. Rheault

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

Other comments: The Industry Need has not been defined for this SAR.



*SAR Commenter Information*

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

*SAR Commenter Information*

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

Yes  No The scope of the SAR is fine as it is

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Summary of Comments**

**Background:**

The “Operate Within Limits - Monitor and Assess Short-term Transmission Reliability ” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits Is there a reliability-related need for an Organization Standard to be developed on this topic?  Yes      No  The scope of the SAR is fine as it is The scope of the SAR should be expanded to include: The scope of the SAR should be reduced to eliminate: Other comments:
---

Fifty-six interested industry participants responded to the above questions. Fifty two of those respondents indicated that there is a reliability-related need for an Organization Standard that addresses this topic.

There were many comments submitted on the scope of the SAR. These comments are addressed in this document. The comments can be viewed in their original format at:

[ftp://www.nerc.com/pub/sys/all\\_updl/standards/sar/BalResDemnd\\_Comments.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/sar/BalResDemnd_Comments.pdf)

In this document the comments have been cut and pasted and organized by central themes.

The SAR DTs consideration of each of the comments submitted follows that comment or suggestion. In cases where there were several comments submitted that made the same or a very similar suggestion, a single response has been provided. The comments submitted by industry participants served as the basis for revising this SAR.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give EVERY comment serious consideration in this process! If you feel there has been an error or omission, you can contact Tom Vandervort in the NERC office. Tom can be reached at 609-452-8060 or at tom.vandervort@nerc.com. Or you can contact the Standards Process Manager, Maureen Long at 305-891-5497 or at spm@nerc.com.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Index to Comments and their Considerations**

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**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Suggestions to Change the Title of this SAR***

Original Title: Operate Within Limits – Monitor and Assess Short-term Transmission Reliability

Revised Title: Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability

**Comment:**

We agree this SAR should be a “core reliability” Organization Standard but suggest the title be revised to “Operate Within Thermal, Voltage and Stability Limits”. (Entergy)

**Consideration:**

This SAR addresses transmission system limits. ‘Which’ limits will be established by another SAR DT, and including a list of elements here would restrict the scope of that SAR.

---

**Comment:**

Change title to " Monitor Transmission Reliability - Operate within Limits". (CA ISO)  
The word “Reliability” is missing from the title of the proposed standard.

**Consideration:**

The word “reliability” was accidentally omitted from the last version of this SAR. This has been corrected

---

**Comment:**

Considering the idea of the NERC White Paper that the description for each proposed standard should identify WHAT performance must be achieved, rather than detailing HOW to achieve that performance, the title of this SAR could be simplified to focus on the “Operating Within Limits”. (The IMO)

**Consideration:**

The suggested revision would reduce the intended scope of this SAR.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Suggestions to Change the Purpose/Industry Need of this SAR***

**Original Purpose/Industry Need:**

To establish a standard that requires the bulk electric transmission system be operated within established limits.

**Revised Purpose/Industry Need:**

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Comment:**

The industry should:

- Develop the criteria for this core reliability Organization Standard,
- Establish measures for measuring conformance to the criteria, and
- Monitor for conformance to the criteria. (Entergy)

**Consideration:**

The SAR DT is trying to do this. Your specific written comments will help ensure that we achieve this.

---

**Comment:**

Additionally, the "Purpose/Industry Need" statement should be rewritten to be more specific as follows: "To establish a standard that requires the bulk electric transmission system be monitored and operated within established thermal, voltage and stability limits". (American Electric Power)

**Consideration:**

The SAR DT revised the purpose to clarify the industry need for this standard. The range of limits to be included will be established by another SAR DT.

---

**Comment:**

Change to: prevent and correct limit violations. (BPA Power Business Line)

**Consideration:**

The industry need section of the SAR addresses the question – Why? The suggested change would answer the question – What? and is addressed in the title of the SAR.

---

**Comment:**

The Industry Need has not been defined for this SAR. (Manitoba Hydro)

**Consideration:**

The Industry Need section of the SAR has been refined so that the reliability-related need for this proposed standard is more clear.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

---

**Comment:**

The SAR should be re-written to say, "Establish a standard that requires adherence to operating limits. (CA ISO)

**Consideration:**

Both the Purpose/Industry Need section and the Brief Description of the SAR have been revised. The suggested language has been included in the revised Brief Description.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Suggestions to Change the Brief Description of this SAR***

**Original Brief Description:**

Establish a standard that requires adherence to operating limits.

Requirements shall include items such as real time monitoring of system parameters against operating limits, correcting limit violations, performing short-term (e.g., next-day) and real-time transmission reliability analyses, etc.

This standard requires adherence to established operating limits identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Revised Brief Description:**

This standard requires adherence to established operating limits<sup>1</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Requirements shall address:

- Real time monitoring of system parameters against operating limits
- Performing short-term and real-time transmission reliability analyses
- Performing corrective actions to mitigate limit violations
- Keeping records and filing reports

**Comment:**

The Organization Standard should include the requirements that appropriate entities:

- Establish thermal, voltage and stability limits for all appropriate facilities and operating conditions,
- The system be operated to respect those limits,
- Measures be developed to assure conformance (Entergy)

**Consideration:**

Establishing limits is being addressed by the “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” SAR DT. This SAR addresses operating within these limits.

Measures will be developed by the Standard Drafting Team that develops the technical language for this proposed standard.

---

**Comment:**

Requirements shall include items such as monitoring of system parameters against operating limits, and correcting limit violations". (CA ISO)

**Consideration:**

The SAR DT included these suggested changes in the revisions made to the SAR.

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<sup>1</sup> These are the limits established through the standard, “Determine Facility Ratings, Operating Limits and Transfer Capabilities”



**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comment:**

Eliminate the item in the Description which states "Do not allow an over-subscription of transfer capability" addresses a business practice and should be eliminated. (Powerex)

**Consideration:**

This referenced text was not included in the SAR and could not be located.

---

**Comment:**

The use of the term "etc." in the SAR description leaves the scope of this SAR open-ended. The scope of the SAR should be stated and complete. (Dairyland) (MAPP Reliability Council)

**Consideration:**

The SAR has been revised to eliminate the "etc.". The details of what will be in the requirements haven't been established.

---

**Comment:**

The purpose/industry need section should start with: The purpose of this standard is to ensure that a consistent, uniformly applied standard is developed for ... (Dynergy)

**Consideration:**

The SAR DT endorsed this concept, but rephrased this to incorporate other suggested changes.

---

**Comment:**

The scope is too broad as stated in the description section of the SAR. More detail is required. Specifying "real time monitoring" and "next-day analysis" crosses into the "how to do it" arena. The standard should simply state the desired results. (Nova Scotia Power)

**Consideration:**

The scope of this SAR is intended to define the boundaries of the proposed standard. Requiring real time monitoring is a "What," not a "How." The industry's comments have indicated that this SAR should focus on identifying "What" performance must be achieved without specifying "How" to achieve that performance.

---

**Comment:**

The title and brief description of the proposed standard refer to "Transmission Reliability". This may be misleading and may imply that the new standard would apply to the transmission function only. The standard should address the reliability of the bulk electric system. (The IMO)

**Consideration:**

This SAR will address transmission only – it will not address distribution or generation. Your comment helped us clarify the description to ensure that it is clear to all.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Detailed Description***

New Detailed Description:

This standard requires that the Reliability Authority and Transmission Operator adhere to established operating limits.

Requirements shall address:

- Real time monitoring of system parameters against operating limits
  - Monitor parameters that indicate the current and expected state of the transmission system (and critical elements)
  - Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system
- Performing short-term and real-time transmission reliability analyses
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- Performing corrective actions to mitigate limit violations
  - Have a mitigation plan
  - Implement mitigation plan where necessary
- Keeping records and filing reports
  - Log violations and maintain records for some period of time
  - Report information to NERC based on specified criteria (magnitude, duration, type of violation)

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Original List of Applicable Functions:**

X	Reliability Authority	Ensures the reliability of the bulk transmission system within its Security Authority Area. This is the highest reliability authority.
X	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
	Interchange Authority	Authorizes valid and balanced Interchange Schedules
	Planning Authority	Plans the bulk electric system
	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
	Transmission Owner	Owens transmission facilities
X	Transmission Operator (TOP)	Operates and maintains the transmission facilities, and executes switching orders
	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer
	Generator	Owens and operates generation unit(s) or runs a market for generation products that performs the functions of supplying energy and Interconnected Operations Services
	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required.
	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

Revised List of Applicable Functions:

X	Reliability Authority	Ensures the reliability of the bulk transmission system within its Security Authority Area. This is the highest reliability authority.
	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
	Interchange Authority	Authorizes valid and balanced Interchange Schedules
	Planning Authority	Plans the bulk electric system
	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
	Transmission Owner	Owens transmission facilities
X	Transmission Operator (TOP)	Operates and maintains the transmission facilities, and executes switching orders
	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer
	Generator	Owens and operates generation unit(s) or runs a market for generation products that performs the functions of supplying energy and Interconnected Operations Services
	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required.
	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR - Summary of Comments and Considerations**

---

**Comment:**

Interchange Authority should be checked because of the definition of "Interchange Schedule" in NERC Operating Policy 3, since schedule implies the actual implemented energy flow. (Calpine) (Southern Company) (Progress Energy) (SERC OPWG)

**Comment:**

Applicability should not be limited to the Reliability Authority, Balancing Authority and Transmission Operator, but should include all operational entities (if you are operating, you have to stay within your defined limits).(Calpine) (Progress Energy) (SERC Compliance Sub)

**Comment:**

The "Assess Transmission future needs and develop transmission plans" SAR does not state a requirement to plan the system so that it can be operated within Operating Limits, therefore, we feel that the Planning Authority should be checked as applicable for this SAR. (Southern Company) (SERC OPWG)

**Comment:**

Add Generator and LSE to the list of Functions to which this standard would apply. (Load dropping can be used as a tool to prevent and correct violations. Generation is critical in the areas of Reactive, Voltage, Frequency, and Reserves. Generators are used extensively in preventing and correcting limit violations.) (BPA Power Business Line)

**Comment:**

Therefore, the "generation operator" reliability function should also apply since they will need to take direction from the Transmission Operator and/or Reliability Authority. (American Transmission Co)

**Comment:**

Planning Authority should be included. (Southeastern Power Adm)

**Consideration:**

The functions checked are the functions that would have performance requirements and associated compliance elements in the proposed standard. At this point, the only functions that would have performance measures as part of this proposed standard are the Reliability Authority and the Transmission Operator.

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**Comment:**

Eliminate the responsibility of the Balancing Authority, which has no bearing on this standard/objective. (FirstEnergy)

**Comment:**

Eliminate Balancing Authority: In reviewing a Balancing Authorities responsibilities, it does not appear to Illinois Power that the BA has any responsibility to Monitor and Assess Short-term Transmission Reliability, and therefore would not be subject to this Standard. (Illinois Power)

**Consideration:**

The Balancing Authority has been dropped from the applicable functions because their role in maintaining frequency is covered within the SAR on Balance Resources and Demand.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

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**Comment:**

The SAR indicates that this standard would apply to Generators and Distribution Providers. Today NERC Policy and Standards do not apply to these Functions. For example, NERC has no authority to require its standards to be applied to determine connection requirements for distribution facilities. And the application of NERC standards to Independent Generators are carried out by transmission owners through interconnection agreements. Is NERC proposing that this will change and they will begin to impose standards directly on distribution providers and generators?

**Consideration:**

This SAR does not include requirements for Generators or Distribution.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comments Submitted Related to Terminology:**

**Comment:**

Various terms for bulk electric system have been used, e.g. “bulk electric transmission system” (Purpose/Industry Need), “bulk transmission system” (Reliability Function) and the “interconnected bulk electric systems” or “bulk electric systems” (Reliability and Market Interface Principles). The terminology should be standardized and consistent. (The IMO)

**Consideration:**

Some of these terms (those contained within the Reliability Functions and the Reliability and Market Interface Principles) are within the SAR Template and changing these templates is outside of the scope of this SAR DT. This SAR doesn't include distribution or generation; the SAR has been revised to clarify this.

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**Comment:**

The primary comment here is that there is a need to agree on terms and definitions. A clear distinction must be made between the violation of a limit that has no impact on the operation of the interconnected system, and the violation of a limit that threatens the security of the interconnected system. (MAAC)

**Consideration:**

This concept should be clarified with the revisions to this SAR. This SAR only addresses security limits, that, if exceeded, have significant consequences. (Not necessarily the loss of a single device which may be a local problem. This SAR does cover items such as cascading outages.)

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**Comment:**

The term "operating limits" is used in this SAR as in the "Determine Facility Ratings" SAR. Please see our comments concerning OSL/OSLV for that SAR and ensure that terms are consistent and defined appropriately. (Calpine) (Southern Company) (Progress Energy) (SERC OPWG)

*(This is the comment submitted on the referenced SAR.)* Common terminology should be used throughout the SARs. If the term "operating limits" is used, a definition is needed. The use of "operating limits" is confusing when past standards have used other terminology such as Operating Security Limits and Operating Security Limit Violations. This standard should address the definition of the terminology used, whether "operating limits" or "Operating Security Limits."

**Consideration:**

The term used in the “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” will be used in this SAR.

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

***Comments about the Level of Detail Within the SAR***

**Comment:**

Add sufficient detail to provide a clear understanding of the specific functions covered by this SAR. (Calpine) (Progress Energy) (SERC Compliance Subcommittee)

**Comment:**

The scope is too general. Would this standard cover operation beyond first-contingency? (Ameren Services)

**Comment:**

There is inadequate detail in the SAR to determine if the scope of the SAR is appropriate and adequate. The scope should not include and requirements on HOW to deal with the prevention or correction of limit violations. (Illinois Power Company)

**Consideration:**

Additional details have been added to the SAR.

***Comments indicating the Focus of the SAR should be on “What” not “How”***

**Comment:**

The Organization Standard should not establish “how” one develops these limits, “how” one operates to meet the limits, “how” one monitors for criteria violations, or “how” one corrects limit violations, or the details of “how” to measure, data warehouse, or “how” to protect against operation outside of the limits. (Entergy)

**Comment:**

Should concentrate on performance instead of procedures such as performing day ahead analysis. An entity could perform day ahead analysis but if no action is taken as a result of the analysis then what good is it? (Cinergy)

**Comment:**

(Eliminate) The procedures on how to alleviate overloads (i.e., TLRs) and other limit violation. (Exelon)

**Comment:**

(Eliminate) procedures on how to curtail transactions and generation schedules to achieve the reliability objectives stated. (Reliant Resources)

**Comment:**

Eliminate all references to HOW this standard would be met such as real time monitoring, data, communications, particular analysis, and timing. These tend to be issues as to HOW to achieve the standard not what the standard should be. (Illinois Power)

**Comment:**

Process and procedures for performing analysis should be part of the certification process and not a standard that has measurement requirements. (Cinergy)

## **First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR - Summary of Comments and Considerations**

### **Consideration:**

The SAR has been revised to indicate that the requirements would address “What” performance must be met without identifying “How” to achieve that performance.

### ***Suggestions to Broaden the Scope of this SAR***

#### **Comment:**

Add redispatch issues. Redispatch is one of the tools the transmission operator will use to make sure the system is operated within the limits. (American Transmission Company)

#### **Consideration:**

Redispatch is a tool that can be used to operate within limits. Specifying the use of a tool would be including details that identified “How” to achieve the required performance. The industry has indicated that this SAR should be written to indicate “What” level of performance must be achieved without indicating “How” to achieve that performance.

### ***Comments Suggesting Additions to Other SARs***

#### **Comment:**

Please note that there should be a companion SAR to this that requires LSEs, distribution providers, and generators to respond to requests that will have the effect of operating the system within Operating Limits. (Calpine) (Southern Company) (Progress Energy) (SERC OPWG)

#### **Consideration:**

This is outside the scope of this SAR DT. You are encouraged to submit a SAR to address this topic if you feel that it should be developed. However, the NERC Organization Certification Task Force (OCTF) is working on a SAR for the certification requirements for the RA – the authority of the RA to direct emergency actions should be contained within the RA’s certification requirements SAR. This could also be addressed within Interconnection Agreements.

### ***Other General Comments on this SAR***

#### **Comment:**

This SAR and the other posted SARs provide an appropriate framework for transitioning existing NERC Operating Policies and Planning Standards into new, NERC Organization Standards. Multiple compliance measures may be defined and developed for each of the eleven proposed Organization Standards. The Organization Standards and related compliance measures should focus on what functions must be performed for reliability, on who is responsible for each compliance measure for each required function and not, on how the compliance measure is achieved. The compliance measure must be measurable or demonstrable to ensure compliance. Adherence to transmission system operating limits is a core reliability requirement and should be addressed by a Standard. Requirements for monitoring real time loading against operating limits and compliance measures for determining those limits are certainly appropriate. Compliance measures for correcting limit violations must make allowance for the various mechanisms in place and being developed to provide market solutions to remedy transmission congestion. These mechanisms are very different from the old “command and control” procedures that are the basis of existing NERC policies. All standards must be crafted to allow market solutions to work while still maintaining system reliability. (ERCOT)



## First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR - Summary of Comments and Considerations

### **Consideration:**

Compliance measures will be identified by the Standards Drafting Team once the SAR's scope is agreed to. However, Compliance Measures are standards of performance and need to be achieved through whatever systems or processes are available within the appropriate timeframe including market solutions. Identifying specific systems or processes would be identifying "How" to achieve a performance goal rather than identifying "What" performance goal to achieve. The industry has stated a preference for new reliability standards that provide the "What" but not the "How."

### **Comment:**

One of the major problems confronting the industry today is in the identification of real-time system limits and operating conditions. Viable communications protocol need to be developed and implemented that will correctly monitor and assess the electric system in a real-time mode. Establishment of a dynamic and valid real-time data system that will accurately depict system conditions will further enable our industry to maximize its potential. We must be able to define short term system requirements and operational limits in such a manner as to promote the efficient and reliable use of the transmission grid. Partial path reservations and also real-time modifications of transmission scheduling need to be addressed in a more accurate manner. The accuracy and timely assessment of current operating limits need to be reviewed, studied, and validated in a sequence that will not inhibit the real-time operations of the system. The development of established limits, and the assessment and comparison of those limits in a real-time environment, will insure that transmission operations will be able to react to the current use that is imposed on the system in a reliable and safe manner. (FirstEnergy)

### **Consideration:**

The SAR DT is trying to develop a SAR that identifies the scope for this standard.

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### **Comment:**

Would it be appropriate to include comments about operating guides in this standard instead of my comments in the proposed standard to "Determine Facility Ratings, Operating Limits, and Transfer Capabilities?" The transmission operator and Reliability Authority should have some discretion in operating within established limits. I.E. if a line is at it's OSL but the OSL limit was based on summer ratings and it is cool outside, the transmission operator shouldn't be forced into some remedial action. (American Transmission Company)

### **Consideration:**

Operating Guides are used in setting limits. Establishing operating limits is being addressed in the SAR called, "Determine Facility Ratings, Operating Limits, and Transfer Capabilities," and is outside the scope of this SAR DT.

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### **Comment:**

Will the standards used here to determine if the system is operated within limits be the same standards that will be used to plan the system? (BPA)

### **Consideration:**

Linking the standards used to determine if the system is operated within limits to the standards used to plan the system is outside the scope of the SAR DT's work. The SAR DT is assigned the job of refining this SAR so it meets the industry's needs. If there are specific measures that you feel should be included in this SAR you need to identify those in your comments.

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**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comment:**

HL&P is uncertain whether a meaningful standard can be developed in this area. There are likely to be different requirements for different types of transmission systems. For a larger, more complicated system, more extensive short-term assessments are likely to be more justified than for smaller systems. (HL&P)

**Consideration:**

This SAR will establish standards for the bulk transmission system. These rules are designed to prevent one entity from damaging another. Regional differences that would require more or less stringent requirements than the standard should be highlighted now so they can be included in the SAR.

**Comments Related to FERC and NAESB**

**Comment:**

Today short-term transmission reliability issues are addressed by congestion management either thru TLR curtailments, LMP or other methods. FERC's proposed SMD requires congestion management in all markets using LMP. Congestion management is a market issue. Therefore, this standard should be developed in a process which takes into account market and reliability interests. (Allegheny Energy Supply)

**Comment:**

The establishment of this SAR is premature. All commercial implications of the SAR should be identified and mitigated prior to the drafting. (Elcon)

**Comment:**

The existing NERC standard Policy 9, includes a procedure known as "TLR" that must be compliant with FERC tariff obligations to curtail transactions. A core reliability standard should only define the limits and conditions required to achieve a reliable and secure transmission system and allow for market-driven procedures to provide tools for the operators to employ to achieve the core reliability requirements. Further, FERC's upcoming Standard Market Design NOPR will entail new congestion management rules for TPs to adhere to. Procedures for transaction curtailment should be developed with the NAESB process and filed at FERC for approval. (Reliant Resources)

**Comment:**

To the extent that this SAR is transitioning an existing standard from the old world to the new world (Functional Model), then the standard should not go beyond the original scope. Consistent with our general comments, once the clarity is achieved on Standard Market Design and RTO formations, then this standard should be revisited and reevaluated. (AEP)

**First Posting of Operate Within Limits – Monitor and Assess Short-term Transmission Reliability  
SAR - Summary of Comments and Considerations**

**Comment:**

The promulgation for comment of these SARs is premature. The industry "standard making process" is in a transition phase and it is overly burdensome to devote resources at this time. Once legislation or FERC firmly determines which entity(ies) is responsible for standards it will make sense to move forward with said entity.

Even if NERC wants to cover reliability standards, almost all standards have a reliability and commercial impact; thereby, necessitating developing a single process that incorporates both commercial and reliability aspects of standards development. The current NERC process risks being changed soon, discounts commercial aspects, and is not part of a finalized overall industry process.

Waiting a short while to move forward on a new standards setting process is acceptable and prudent given that NERC standards are currently in place and the industry can continue to use these standards until the new process and standards setting organization(s) are firmly set.  
(Baltimore Gas & Electric)

**Comment:**

It is premature to continue development of this SAR until FERC has specified the organization to be responsible for the development of wholesale electric standards. (Public Service Electric & Gas)

**Consideration:**

The NERC Board of Trustees directed us to move forward in developing core reliability standards. The SAR contains only reliability-related elements. There are no references to TLR or other market mechanisms in this SAR.

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Standard Authorization Request (SAR) Form**

Title of Proposed Standard:	Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability
Request Date:	March 7, 2002
Authorized for Posting:	March 20, 2002
SAR ID# :	OPER_WITHN_LMTS_01_02

<b>SAR Requestor Information</b>	<b>SAR Type</b> (Put an 'x' in front of one of these selections)	
Name: Jim Byrd (Al DiCaprio as substitute)	X	New Standard
Primary Contact: Al DiCaprio		Revision to existing Standard
Telephone: 610 666-8854 Fax: 610 666-4282		Withdrawal of existing Standard
e-mail: dicapram@pjm.com		Emergency Action

**Purpose/Industry Need**

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Brief Description** (Provide one or two sentences.)

This standard requires adherence to established operating limits<sup>1</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Requirements shall address:

- Real time monitoring of system parameters against operating limits
- Performing short-term and real-time transmission reliability analyses
- Performing corrective actions to mitigate limit violations
- Keeping records and filing reports

<sup>1</sup> These are the limits established through the standard, "Determine Facility Ratings, Operating Limits and Transfer Capabilities"

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Reliability Functions**

<b>The Standard will Apply to the Following Functions (Put an 'X' in front of each one that applies)</b>		
X	Reliability Authority	Ensures the reliability of the bulk transmission system within its Security Authority Area. This is the highest reliability authority.
	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
	Interchange Authority	Authorizes valid and balanced Interchange Schedules
	Planning Authority	Plans the bulk electric system
	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
	Transmission Owner	Owns transmission facilities
X	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
	Distribution Provider	Provides and operates the "wires" between the transmission system and the customer
	Generator	Owns and operates generation unit(s) or runs a market for generation products that performs the functions of supplying energy and Interconnected Operations Services
	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required.
	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Reliability and Market Interface Principles**

<b>Applicable Reliability Principles (Put an 'x' in front of all that apply)</b>	
X	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions.
	2. The frequency of interconnected bulk electric systems shall be controlled within defined limits through the balancing of electric supply and demand
X	3. Information necessary for planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably
	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented
X	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems
X	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions
X	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis
<p><b>Does the proposed Standard comply with all of the following Market Interface Principles?</b></p> <p style="text-align: right;">Yes</p> <p><i>(Enter 'yes' or 'no')</i></p>	
1. Interconnected The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy	
2. An Organization Standard shall not give any market participant an unfair competitive advantage	
3. An Organization Standard shall neither mandate nor prohibit any specific market structure	
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard	
5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards	

## **SAR: *Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability***

### **Detailed Description**

This standard requires that the Reliability Authority and Transmission Operator adhere to established operating limits.

Requirements shall address:

- Real time monitoring of system parameters against operating limits
  - Monitor parameters that indicate the current and expected state of the transmission system
  - Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system
- Performing short-term and real-time transmission reliability analyses
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- Performing corrective actions to mitigate limit violations
  - Have a mitigation plan
  - Implement mitigation plan where necessary
- Keeping records and filing reports
  - Log violations and maintain records for some period of time
  - Report information to NERC based on specified criteria (magnitude, duration, type of violation)

### **Related SARs**

<b>SAR ID</b>	<b>Explanation</b>
FACILITY_RATINGS_01_01	The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” SAR identifies how operating limits are established. The operating limits established within this proposed standard are referenced in the proposed “Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability” standard.
COORD_OPERATIONS_01_01	The “Coordinate Operations” SAR identifies what reliability-related information to exchange between Functions. Some of the information collected within the proposed “Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability” standard will be used in the proposed “Coordinate Operations” standard.
ABNML_&_EM_COND_01_01	The “Prepare for and respond to Abnormal or Emergency Conditions” SAR will be implemented where this one stops. The two SARs are related.

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

***Regional Differences***

<b>Region</b>	<b>Explanation</b>
ECAR	None identified
ERCOT	None identified
FRCC	None identified
MAAC	None identified
MAIN	None identified
MAPP	None identified
NPCC	None identified
SERC	None identified
SPP	None identified
WSCC	None identified



**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

**Implementation Plan**

**Description** (Provide plans for the implementation of the proposed standard, including any known systems or training requirements.)

**The following sections of Operating Policies should be retired when this standard is implemented:**

Policy 2 – Transmission

- Standard A.1.
- Standard A.1.1.
- Standard A.1.2
- Standard A.2.
- Standard A.2.1.
- Standard A.2.2.
- Requirement A.1.
- Requirement A.1.1.
- Requirement A.1.2.
- Requirement B.1.
- Requirement B.5.

Policy 9 – Security Coordinator Procedures

- Introduction – Introductory paragraph and second and third bullets
- Requirement A.1.
- Requirement A.1.2.
- Requirement C. 3.1.
- Requirement C.3.2.
- Requirement C.3.2.1.
- Requirement C.3.2.1.1.

Policy 4 – System Coordination

- Section A (*Section A needs careful scrutiny by numerous SAR Drafting Teams*)

Policy 5 – Emergency Operations

- Section C
- Section D

**SAR: Op. Within Trans. System Limits - Monitor and Assess Short-term Reliability**

<b>SAR Drafting Team</b>	
<b>Chairman</b>	James Case
<b>Secretary</b>	Tom Vandervort
<b>Requestor</b>	Jim Byrd/Al DiCaprio
<b>Industry Representatives</b>	Daniel Boezio Timothy Cronin Roger Farrugia Mark Fidrych Tony Jankowski Drew Kovalak Bill Lundin Ellis Rankin Edward Riley Richard Schneider Toni Timberman Stanley Williams

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

*Note – This form is to comment on version 2 of the Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR.*

*The latest version of this SAR (OPER\_WITHIN\_LMTS\_01\_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>*

*E-mail this form between August 19 – September 18, 2002, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.*

***Please review the changes made to the SAR and answer the questions in the yellow boxes.***

*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

<b>SAR Commenter Information</b>			
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Organization	PSE&G		
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E-mail	Arthur.giardino@pseg.com		

**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments: This may be a glitch in the process. The 'yes' to "Does the proposed Standard comply with all the Market Interface Principles" is premature. The actual wording of the standard may in fact violate Market Interface Principle #4. Until the Standard is final, we can't answer the question!!*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, Regional Councils, and NERC Subcommittees. The SAR DT considered the comments submitted by industry participants and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants.

There were relatively few changes suggested to the SAR, and the SAR DT has addressed through the revisions made to the SAR. The SAR DT feels that this SAR is ready to go to the Standards Authorization Committee for their approval to develop this standard.

The revised SAR has been re-posted from August 19 – September 18, 2002. Please review the revised SAR and complete this form to let the SAR DT know if you agree or disagree with the SAR DT's assessment that this SAR is ready to be developed into a standard.

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**SAR Commenter Information**

Name            Jim Cyrulewski Vice-President of Operations, International Transmission Company and Manager-MEPCC

Organization    On behalf of the Michigan Electric Coordinated Systems (MECS) Control Area

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

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**SAR Commenter Information**

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**Background**

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Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

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- The scope of the SAR is fine as it is
- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

*Other comments:*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, Regional Councils, and NERC Subcommittees. The SAR DT considered the comments submitted by industry participants and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants.

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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

*Note – This form is to comment on version 2 of the Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR.*

*The latest version of this SAR (OPER\_WITHN\_LMTS\_01\_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>*

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***Please review the changes made to the SAR and answer the questions in the yellow boxes.***

*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

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Organization AEP

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes       No

The scope of the SAR is fine as it is

    The scope of the SAR should be expanded to include:

    The scope of the SAR should be reduced to eliminate:

***Other comments: The SARDT will coordinate the standard development effort with its NAESB counterpart because this proposed SAR has commercial implications.***

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**SAR Commenter Information**

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Organization    Mirant Americas Energy Marketing

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

- The scope of the SAR is fine as it is
- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

*Other comments:*



**Second Posting of Operate Within Transmission System Limits – Monitor and  
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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**SAR Commenter Information**

Name            Ed Riley

Organization    California ISO

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments: See comments under #2.*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Add, under the detailed description, Third bullet "Performing Corrective Actions to Mitigate Limit Violations", "Have a mitigation plan that does not require a neighboring utility or Reliability Authority to take any unplanned actions."

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**SAR Commenter Information**

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Organization    MAAC

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**Background**

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

- The scope of the SAR is fine as it is
- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

*Other comments:*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**



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**SAR Commenter Information**

Name            Tom Kraynak - ECAR

Organization    On Behalf of the following companies only:

American Electric Power , Allegheny Power, Allegheny Energy Supply, AES/IPALCO, Big Rivers Electric Cooperative, CINergy, Consumers Energy, Dayton Power & Light, Detroit Edison Co., East Kentucky Power Cooperative, FirstEnergy Corp., LGE Energy, Michigan Electric Coordinated Systems, Northern Indiana Public Service Co., Ohio Valley Electric Corp, and Vectren Energy Delivery of Indiana.

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include: Each requirement in the detailed description should have an objective or desired outcome.

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
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**Second Posting of Operate Within Transmission System Limits – Monitor and  
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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Each requirement in the detailed description should have an objective or desired outcome. For example the existing SAR has the following listing under the Detailed Description:

- + Performing corrective actions to mitigate limit violations
  - Have a mitigation plan

A possible rewrite to include an objective or desired outcome would be

- + Performing corrective actions to mitigate limit violations
  - Have a mitigation plan that can be activated and is expected to restore the system to within limits in a specified time frame.

Having a mitigation plan of 'say a prayer' satisfies the original requirement. Each entry in the Detailed Description needs an objective or desired outcome.

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**SAR Commenter Information**

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Organization   Allegheny Energy Supply

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**Background**

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

- The scope of the SAR is fine as it is
- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

*Other comments:*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Add descriptions to standards and requirements.

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**SAR Commenter Information**

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Organization    Exelon

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**Background**

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Yes    No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

Other comments:



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Yes

No

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**SAR Commenter Information**

Name Tom Petrich

Organization PG&E

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**Background**

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

Other comments:

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

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**SAR Commenter Information**

Name Edward Stoneburg

Organization Illinois Power Company

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**Background**

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Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

X Yes No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

X The scope of the SAR should be reduced to eliminate: The HOW of operating within limits

Other comments:

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

---

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

- Yes  
 No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Illinois Power is still concerned, as it was in its comments on the initial draft of the SAR, that the SAR still includes a number of references to HOW. To correct this, IP suggests the following changes.

Suggested changes to the Brief Description:

This standard requires adherence to established operating limits<sup>1</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Requirements shall address:

- Documentation of operating limits identified to prevent instability, uncontrolled separation or cascading outages readily available to the Reliability Authority and Transmission Operator
- ~~Real time m~~Monitoring of necessary system parameters against the identified operating limits
- Performing ~~short term and real time~~ transmission reliability analyses relative to the identified operating limits
- Performing corrective actions, including identification and use of operating guides to mitigate limit violations
- Keeping records and filing reports

<sup>1</sup> These are the limits established through the standard, "Determine Facility Ratings, Operating Limits and Transfer Capabilities" that are further identified to prevent instability, uncontrolled separation or cascading outages

Suggested Changes to the Detailed Description:

This standard requires that the Reliability Authority and Transmission Operator adhere to established operating limits identified to prevent instability, uncontrolled separation or cascading outages.

Requirements shall address:

- 1 Demonstration that the RA and TO have current information on the identified operating limits



**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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-- Process in place for updating the RA/TO when changes are made in the identified operating limit

2 Real-time monitoring of necessary system parameters against the identified operating limits

– Monitor parameters that indicate the current and expected state of the identified operating limit transmission system

– ~~Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system~~

3 Performing short-term and real-time transmission reliability analyses relative to the identified operating limits

– Collect data needed for performing ~~real-time~~ reliability analyses

-- Have the capability to perform necessary studies relative to the identified operating limits

– ~~Conduct an operating assessment to identify limiting facilities~~

4 Direct or performing corrective actions to to mitigate return the system within the identified operating limits violations

– Have ~~a mitigation documented plans and operating guides~~

– Implement ~~mitigation plans~~ when necessary

5 Keeping Maintenance of records and filing reportings

– Document applicable operating guides and their use

- ~~Log violations and maintain records for some period of time~~ Document instances of exceeding the identified operating limits

- Document actions taken to limit the risk of instability, uncontrolled separation and cascading outages

– ~~Make Reports required by information to~~ NERC based on specified criteria (magnitude, duration, type of violation risk)

6 The standard will not address

- loss of a single device

- cascading outages

- security limits that if exceed will not have significant consequences

- distribution and generation

With respect to the deletion of the bullet on monitoring the state of tielines, IP does not believe this should be a requirement of this standard. Within the scope of this standard, these lines might only need to be monitored if the were an identified operating limit.

With respect to the addition of Item 6, IP felt that the decisions by the SAR drafting team, documented in the responses to the comments received on the prior draft of this SAR, to specifically exclude these items from the standard needs to be made a part of the SAR so it is communicated to the standard drafting team.

IP also believes that Reliability Principle 4 applies since the standard would address plans for emergency operation

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

---



**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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***Please review the changes made to the SAR and answer the questions in the yellow boxes.***

*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

<b>SAR Commenter Information</b>			
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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

X Yes            No

The scope of the SAR is fine as it is

x The scope of the SAR should be expanded to include: Generators and loads

The scope of the SAR should be reduced to eliminate:

**Other comments:** Generators and Loads are to be addressed in the Coordination of Operations SAR. These entities can also affect reliability of operation as they are tightly connected and a failure to do the right thing by either of these entities can result in operation outside of transmission system limits. Therefore these entities need to be included in this SAR to ensure that they comply to instructions provided by the operator and follow commitments made at the scheduling stage.

**Second Posting of Operate Within Transmission System Limits – Monitor and  
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Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, Regional Councils, and NERC Subcommittees. The SAR DT considered the comments submitted by industry participants and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants.

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**Second Posting of Operate Within Transmission System Limits – Monitor and  
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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Standards arising from this SAR must apply to all entities operating in the system. In reality, this means the following:

- the Balancing Authority has obligations to ensure correct schedules and ensure resource allocations which avoid limits
- the Interchange Authority is required to ensure transmission line limits are respected
- the Generator is required to adhere to limits and expectations (i.e. providing Q)
- the Load Serving Entities will be required to drop load if required.

Reliability principle 3 also applies - frequency is another element of operation that needs to stay within limits.

The standard should also address the supply of critical information.

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*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

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Organization    We Energies

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include: The basic assumptions that establish the authority of the RA and TP to act, the operational requirements to accomplish the standard and so forth. These items are assumed to be covered in the Certification requirements. Also the 3 related SAR's are not developed yet and it is difficult to have confidence that they will mesh with this one.

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
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Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, Regional Councils, and NERC Subcommittees. The SAR DT considered the comments submitted by industry participants and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants.

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

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*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

Name            Toni Timberman

Organization    Bonneville Power Administration - Transmission

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

- The scope of the SAR is fine as it is
- The scope of the SAR should be expanded to include:
- The scope of the SAR should be reduced to eliminate:

*Other comments:*

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Regarding the Detailed Description:

1. Some of the requirements are the responsibility of the Reliability Coordinator and some are the responsibility of the Transmission Provider. The requirements need to clearly delineate the responsibilities of Transmission Provider vs. Reliability Coordinator.
2. A requirement for conformance to NERC Reliability Criteria should be included.
3. In the wording for the first bullet regarding Real-Time Monitoring, the words "and expected" should be deleted. Expected conditions are part of the data gathered for the reliability analysis covered under the second bullet, rather than for Real-Time Monitoring.

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

Name            David H. McMillan

Organization Calpine

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes            No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

"Scope" is appropriately defined

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

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E-mail [rwpierce@duke-energy.com](mailto:rwpierce@duke-energy.com)

**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*



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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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<b>SAR Commenter Information</b>			
Name	George Bartlett		
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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits
Is there a reliability-related need for an Organization Standard to be developed on this topic?
Yes            No
The scope of the SAR is fine as it is
The scope of the SAR should be expanded to include:
The scope of the SAR should be reduced to eliminate:
<i>Other comments:</i>

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

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**SAR Commenter Information**

Name            Jim Case

Organization    Entergy

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**Background**

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Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes            No

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The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*

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**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

N/A



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<b>SAR Commenter Information</b>			
Name	Mr. Charles Moser (Northborough, MA) and Mr. Ronald Halsey (Syracuse, NY)		
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			508 421 7520 315 428
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None			

**Background**

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Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes            No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

---

**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

Name            Jim Byrd

Organization    Oncor

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**Background**

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Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes    No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include: There are two important dimensions missed in the Purpose/Brief Description. 1) Protect transmission equipment from damage due to overloading and 2) protect public health, safety, welfare or national security. (this is spelled out in the OSPM) The Requirement - corrective action to mitigate limit violations addresses these and other dimensions of this proposed standard.

The scope of the SAR should be reduced to eliminate:

*Other comments:*

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The revised SAR has been re-posted from August 19 – September 18, 2002. Please review the revised SAR and complete this form to let the SAR DT know if you agree or disagree with the SAR DT's assessment that this SAR is ready to be developed into a standard.

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

---

**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Relationships among RA, T Operator, T Owner, TSP - need to be identified and addressed as well as data requirements from market participants necessary for monitoring and analysis. While these may be provided through Certification or other Standards , this standard can not be done without those relationships/linkages identified and in place. It IS unclear to me if this is part of the SAR, Standard DT, or some other responsibility.

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

*Note – This form is to comment on version 2 of the Monitor and Assess Short-term Reliability SAR.*

*The latest version of this SAR (OPER\_WITHN\_LMTS\_01\_02) is posted on the Standards web site at: <http://www.nerc.com/~filez/sar-approved.html>*

*E-mail this form between August 20 – September 18, 2002, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.*

***Please review the changes made to the SAR and answer the questions in the yellow boxes.***

*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

Name Charles Yeung

Organization Reliant Resources

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Fax

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

---

Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, Regional Councils, and NERC Subcommittees. The SAR DT considered the comments submitted by industry participants and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants.

There were relatively few changes suggested to the SAR, and the SAR DT has addressed through the revisions made to the SAR. The SAR DT feels that this SAR is ready to go to the Standards Authorization Committee for their approval to develop this standard.

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**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

---

**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Detailed Description

It still appears that this SAR is merely a set of procedures to implement limits that will be established in another SAR, the FACILITY RATINGS SAR.

Although there is certainly a need to have procedures to ensure that Facility Ratings, Operating Limits, and Transfer Capabilities are not violated, Reliant still questions whether it is appropriate to embark on a distinct STANDARD to enforce those limits? What then would be the enforcement mechanism for the FACILITY RATINGS Standard? Could it possibly be:

- 1) Real time monitoring of system parameters against operating limits
  - Monitor parameters that indicate the current and expected state of the transmission system
  - Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system
- 2) Performing short-term and real-time transmission reliability analyses
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- 3) Performing corrective actions to mitigate limit violations
  - Have a mitigation plan
  - Implement mitigation plan where necessary
- 4) Keeping records and filing reports
  - Log violations and maintain records for some period of time
  - Report information to NERC based on specified criteria (magnitude, duration, type of violation)

These of course are conveniently the items in the Detailed Description of the operate Within Transmission Limits SAR

???????

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

*Note – This form is to comment on version 2 of the Monitor and Assess Short-term Reliability SAR.*

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***Please review the changes made to the SAR and answer the questions in the yellow boxes.***

*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

Name            Mike Miller

Organization    Southern Company Services, Inc.

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E-mail            mbmiller@southernco.com

**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes            No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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The revised SAR has been re-posted from August 20 – September 18, 2002. Please review the revised SAR and complete this form to let the SAR DT know if you agree or disagree with the SAR DT's assessment that this SAR is ready to be developed into a standard.

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

---

**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Assumption that operating limit definition and all associated definitions are captured may leave a void. Under "Brief Description" Performing corrective actions to mitigate limit violations. (assumes limit violations has a definition). Might use performing corrective actions to mitigate exceeding operating limits. Wouldn't the standard apply to Balancing Authority? In integrating plan it should be required to adhere to operating plan taking into consideration system limits?

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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***Please review the changes made to the SAR and answer the questions in the yellow boxes.***

*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

**SAR Commenter Information**

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Organization SRP

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**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits

Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The scope of the SAR should be reduced to eliminate:

*Other comments:*

**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

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Comments were received from many different sources, including individuals, small and large utilities, groups of utilities, Regional Councils, and NERC Subcommittees. The SAR DT considered the comments submitted by industry participants and revised the SAR to conform with the changes that were technically sound and appeared to be requested by or to represent a consensus of the participants.

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**SAR Comment Form for 2<sup>nd</sup> Posting of the Operate Within Limits – Monitor and Assess Short-term Transmission Reliability SAR**

---

**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

SARs, per the Standards manual, are supposed to define the scope of the standard. Standards are the requirements that necessary to ensure the NERC reliability principles are met. Thus the SAR should provide us enough information, that is at least the requirements, so the industry and the SAC can judge whether standard as described in the SAR is acceptable.

The brief and detailed description says what the "requirements shall address" not what they are. The only statement that comes close to a requirement is the SAR says the standard requires adherence to established limits. What does that mean? The title say more about the standard than the description.

This SAR falls short and needs to be redrafted.

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

I really can not address the second question because as indicated above, I do not know what the requirements of the standard are. The WECC RMS standard can be used as an example of requirements should be.

Other comments:

1. Once again not being able to know the specifics of what's proposed it is hard to know what is proposed.

2. Page SAR-4, For record keeping the correct language is to say the records will be maintained for the "retention period".

3. Page SAR-4, Under record keeping the reporting of security violations should be reported to reliability authorities and the region(s) as well as NERC.

4. On page SAR-6 sections of the operating policies that will be retired are listed.

a. What are these policies? Is everything in these sections to be retired? Do we have to go and research the policies to know what is being proposed? More information should be given about what is to be deleted and we should not have to go look for it.

b. If all of the listed sections are retired, is there any other material in these sections that should be retained somewhere in some form?

c. The major heading of Implementation Plan indicates plans are to be provided for implementation of the proposed standard including training requirements. No such information was provided.

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

*Note – This form is to comment on version 2 of the Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR.*

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***Please review the changes made to the SAR and answer the questions in the yellow boxes.***

*If you have questions, please call the Standards Process Manager, Maureen Long at 305-891-5497 or send a question to [spm@nerc.com](mailto:spm@nerc.com).*

<b>SAR Commenter Information</b>			
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Organization	Western Electricity Coordinating Council		
Telephone	(801) 582-0353	Fax	(801) 582-3918
E-mail	ken@wecc.biz		

**Background**

The “Monitor and Assess Short-term Transmission Reliability - Operate Within Limits” SAR was posted for a 30-day public comment period from April 2 through May 3, 2002. On July 2, 2002 the Standards Authorization Committee (SAC) appointed a team to address the industry’s comments submitted in response to the following questions asked about this SAR:



**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

---

Look at SAR called: Monitor and Assess Short-term Transmission Reliability - Operate Within Limits  
Is there a reliability-related need for an Organization Standard to be developed on this topic?

Yes  No

The scope of the SAR is fine as it is

The scope of the SAR should be expanded to include:

The members of the Compliance Process Task Force (CPTF) of the Western Electricity Coordinating Council believe the purpose of the Operate Within Limit should include:

Actual power flow and net scheduled power flow over an interconnection or transfer path shall be maintained within Operating Transfer Capability (Security) Limits ("OTC"). The purpose of the proposed standard is to prevent actual path flow from exceeding its limit. Operating above a path's limit can result in loss of load, uncontrolled separation, and damage to transmission facilities when a system element (e.g. transmission line) outage occurs. When net schedules exceed the path limit, it can result in inadvertant flow and overloads on other system facilities.

The industry need for major transmission paths is as follows.

Transmission Path Operators, Transmission Owners, and Control Area Operators shall operate major transmission paths (the transmission system) within security limits so that instability, uncontrolled separation or cascading outages will not occur as a result of the most severe outage or single contingency. Several widespread system outages have occurred when major path limits were exceeded.

A brief description of the proposed standard is as follows.

Actual power flow or schedules on transmission paths identified by the Regional Reliability Organization shall at no time exceed the OTC for more than 20 minutes for paths that are stability limited, or for more than 30 minutes for paths that are thermally limited.

The scope of the SAR should be reduced to eliminate:

*Other comments:*

*A detailed discription of the proposed standard develop by CPTF is as follows.*

*Operating Transfer Capability Limit Standard*

*Actual power flow and net scheduled power flow over interconnections or transfer paths defined by the Regional Reliability Organization shall be maintained within Operating Transfer Capability Limits ("OTC"). The OTC is the maximum amount of actual power that can be transferred over direct or parallel transmission elements comprising:*

- 1. An interconnection from one Control Area to another Control Area; or*
- 2. A transfer path within a Control Area.*

*The net schedule over an interconnection or transfer path within a Control Area shall not exceed the OTC, regardless of the prevailing actual power flow on the interconnection or transfer path.*

*a. Operating limits. No elements within the interconnection shall be scheduled above*

**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

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*continuous operating limits. An element is defined as any generating unit, transmission line, transformer, bus, or piece of electrical equipment involved in the transfer of power within an interconnection.*

*b. Stability. The interconnected power system shall remain stable upon loss of any one single element without system cascading that could result in the successive loss of additional elements. The system voltages shall be within acceptable limits defined in the Regional and NERC Planning Standards. If a single event could cause loss of multiple elements, these shall be considered in lieu of a single element outage. This could occur in exceptional cases such as two lines on the same right-of-way next to an airport. In either case, loss of either single or multiple elements should not cause uncontrolled, widespread collapse of the interconnected power system. For purposes of this section, stability shall include transient stability, post transient stability or dynamic stability whichever is most limiting to OTC.*

*c. System contingency response. Following the outage and before adjustments can be made:*

- (i) No remaining element shall exceed its short-time emergency rating.*
- (ii) The steady-state system voltages shall be within emergency limits.*

*The limiting event shall be determined by conducting power flow and stability studies while simulating various operating conditions. These studies shall be updated as system configurations introduce significant changes in the interconnection.*

**3. Data Reporting Requirement**

*By no later than 5:00 p.m. on the first Business Day following the day on which an instance of noncompliance occurs or other such date defined by the region, a transmission path operator or owner shall submit to the regional office operating transfer capability data (see attachment 1) for each such instance of noncompliance. On or before the tenth day of each calendar quarter (or such other date specified by the region, the path operator or owner (including entities with no reported instances of noncompliance) shall submit to the regional office a completed OTC summary compliance form (see attachment 2) for the immediately preceding calendar quarter.*

**4. Compliance Standard**

*Actual power flow on all transmission paths shall at no time exceed the OTC for more than 20 minutes for paths that are stability limited, or for more than 30 minutes for paths that are thermally limited.*

**5. Noncompliance Levels**

*For each separate incident violating the OTC compliance standard, the level of the violation shall be as set forth in the Noncompliance Levels for Operating Transfer Capability table (Attachment 3):*

**6. Sanctions**

*For purposes of applying the sanctions for violations of this criterion, the "Sanction Measure" is Normal Path Rating and the "Specified Period" is the most recent calendar month.*

**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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**Second Posting of Operate Within Transmission System Limits – Monitor and  
Assess Short-term Reliability SAR - Comment Form**

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**Second Posting of Operate Within Transmission System Limits – Monitor and Assess Short-term Reliability SAR - Comment Form**

---

**1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?**

Yes

No

**2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed:**

Please see detailed description provided in the other comments, above, for additional refinements.

Attachment 1  
**Operating Transfer Capability  
Reporting Form**

<b>1. Transfer Path Operator</b>					
<b>2. Transfer Path Name</b>					
<b>3. Path Number</b>	No.				
<b>4. Flow Direction</b>	Term 1		Term 2		
<b>5. Date and time of incident</b>	Date:		Time:		
<b>6. OTC Limit at time of incident - MW</b>			Time zone:		
<b>7. Actual Path Flow - MW</b>					
<b>8. Scheduled Path Flow - MW</b>					
<b>9. MW over limit</b>			Percent over limit		_____
<b>10. Duration of incidents - minutes</b>					
<b>11. Type of Limit</b>					

Reporting Instructions:

1. Transfer Path Operator - Enter regional acronym for the Transfer Path Operator. (Acronyms and transfer paths for the WECC region are defined in Table 2 (attachment 4).
2. Transfer Path Name - Enter name from Table 2 (attachment 4).
3. Path Number - Enter path number from Table 2 (attachment 4).
4. Flow Direction - Table 2 defines the path to be monitored for reporting purposes, each path must have a Terminal 1 (sending bus or area) name and a Terminal 2 (receiving bus or area) name. Positive flow direction is from Term 1 to Term 2. Use this convention to report scheduled and actual flow. For example, if TOT2 Term 1 was named South, Term 2 was named North, and there was - 700 MW reported on line 7; the flow across TOT2 would be 700 MW North to South.
5. Date and time of incident - Date: Enter 2 digits each for Month, Day, and Year. Time: Enter 2 digits each for hour, minute, and second. Time zone enter MST, PST, MAST, PAST, etc.
6. Operating Transfer Capability Limit at time of incident - Enter the MW transfer capability at the time of the incident.
7. Actual Path Flow at time of incident - Enter the actual value of the MW flow at the 20-minute duration point for flows exceeding a stability limit and at the 30 minute duration point for flows exceeding a thermal limit.
8. Scheduled Path Flow at time of incident - Enter the MW scheduled flow from Term 1 to Term 2.
9. MW over limit - Line 7 minus Line 6.
10. Duration of incident - Time in hours, minutes, and seconds that actual flow exceeded OTC.
11. Type of Limit - Enter Stability or Thermal to identify the type of limit for the Path.

Attachment 2  
**Operating Transfer Capability Compliance Notification**

1. Reporting Path Operator or Path Owner: \_\_\_\_\_
2. Contact Person's Name: \_\_\_\_\_
3. Contact Person's Phone No.: \_\_\_\_\_
4. Reporting Period: \_\_\_\_\_

5.  The Path Operator or Path Owner was fully compliant with the Operating Transfer Capability compliance criteria of RMS for the reporting period.
6.  The Reporting Path Operator or Path Owner is not an operator of one of the transmission paths identified for compliance reporting
7.  The Reporting Path Operator or Path Owner experienced reportable Operating Transfer Capability incidents for the reporting period. The Operating Transfer Capability incidents have been submitted as specified in the detailed compliance reporting instructions.
8.  The Reporting Path Operator or Path Owner experienced reportable Operating Transfer Capability incidents for the reporting period. The Operating Transfer Capability incidents have **not** been submitted as specified in the detailed reporting instructions.

Reporting Instructions:

1. Reporting Path Operator or Path Owner - Enter the acronym for the Path Operator or Path Owner.
2. Contact Person's Name - Enter the name of the reporting Path Operator or Path Owner employee.
3. Contact Person's Phone No. - Enter the employee's telephone number.
4. Reporting Period - Enter the quarter being reported (i.e. July 1 through September 30, 2002).
5. Check the box if no reportable OTC incidents were experienced during the reporting period.
6. Check the box if the Path Operator or Path Owner does not operate one of the major transmission paths identified in the compliance reporting instructions.
7. Enter the number of reportable OTC incidents that were reported by the Path operator or Path Owner for the reporting period.
8. Enter the number of reportable OTC incidents that were not reported by the Path Operator or Path Owner for the reporting period.

Attachment 3

**Noncompliance Levels for Operating Transfer Capability**

Thermal Limited Paths:	Limit exceeded for more than 30 minutes, up to 35 minutes	Limit exceeded for more than 35 minutes, up to 40 minutes	Limit exceeded for more than 40 minutes, up to 45 minutes	Limit exceeded for more than 45 minutes
Stability Limited Paths:	Limit exceeded for more than 20 minutes, up to 25 minutes	Limit exceeded for more than 25 minutes, up to 30 minutes	Limit exceeded for more than 30 minutes, up to 35 minutes	Limit exceeded for more than 35 minutes
Percentage by which net scheduled or actual flows <u>exceed</u> OTC*				
greater than 0%, up to and including 5%	Level 1	Level 2	Level 2	Level 3
greater than 5%, up to and including 10%	Level 2	Level 2	Level 3	Level 3
greater than 10%, up to and including 15%	Level 2	Level 3	Level 3	Level 4
greater than 15%, up to and including 20%	Level 3	Level 3	Level 4	Level 4
greater than 20%, up to and including 25%	Level 3	Level 4	Level 4	Level 4
greater than 25%	Level 4	Level 4	Level 4	Level 4

\* measured after 20 continuous minutes of net scheduled or actual flows in excess of OTC.



## Attachment 4

Table 2

**Existing WECC Bulk Power Transmission Paths (BPTP)  
(Revised October 20, 2000)**

	<b>PATH NAME*</b>	Path Number	Operating Agent
1.	Alberta - British Columbia	1	BC Hydro
2.	Northwest – Canada	3	BC Hydro
3.	West of Cascades – North	4	BPA
4.	West of Cascades – South	5	BPA
5.	West of Hatwai	6	AVA/BPA
6.	Montana to Northwest	8	NWMT
7.	Idaho to Northwest	14	IPC
8.	South of Los Banos or Midway- Los Banos	15	CISO
9.	Idaho – Sierra	16	SPP
10.	Borah West	17	IPC
11.	Idaho – Montana	18	NWMT
12.	Bridger West	19	PAC
13.	Path C	20	PAC
14.	Southwest of Four Corners	22	APS
15.	PG&E – SPP	24	CISO
16.	Northern – Southern California	26	CISO
17.	Intmntn. Power Project DC Line	27	LADWP
18.	TOT 1A	30	WAPA
19.	TOT 2A	31	WAPA
20.	Pavant – Gonder 230 Kv Intermountain – Gonder 230 kV	32	SPP/LADWP
21.	TOT 2B	34	PAC
22.	TOT 2C	35	NEVP
23.	TOT 3	36	WAPA
24.	TOT 5	39	WAPA
25.	SDGE – CFE	45	CISO/CFE
26.	West of Colorado River (WOR)	46	CISO
27.	Southern New Mexico (NM1)	47	EPE
28.	Northern New Mexico (NM2)	48	PNM
29.	East of the Colorado River (EOR)	49	APS
30.	Cholla – Pinnacle Peak	50	APS
31.	Southern Navajo	51	APS
32.	Billings – Yellowtail – Crossover Phase Shifter	53 & Crossover/ Yellowtail	NWMT
33.	Brownlee East	55	IPC
34.	Lugo – Victorville 500 kV	61	CISO/LDWP
35.	Pacific DC Intertie	65	BPA/LADWP
36.	COI	66	BPA/CISO
37.	North of John Day cutplane	73	BPA
38.	Alturas	76	SPP
39.	SCIT**		CISO
40.	COI/PDCI – North of John Day cutplane**		BPA

\* For an explanation of terms, path numbers, and definition for the paths refer to WECC's Path Rating Catalog.

\*\* The SCIT and COI/PDCI-North of John Day Cutplane are paths that are operated in accordance with nomograms identified in WECC's Path Rating Catalog.

**Summary of Comments, Organized By Question Number**

**Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission System Limits SAR  
Second Posting Summary of Comments**

**Background**

The Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission System Limits SAR was posted for a second public comment period from August 20 through September 23, 2002. The SAR DT asked industry participants to provide feedback on the revisions made to the SAR through a special SAR Comment Form. There were 26 sets of comments submitted via this special SAR Comment Form. The comments can be viewed in their original format at:

<http://www.nerc.com/~filez/sar-approved.html>

In this document, the comments have been cut and pasted under the two questions:

1. Do you agree with the SAR DT that this SAR is ready to be developed into a standard?
2. If you feel that the scope of this SAR needs additional refinement, please identify specifically what needs to be changed?

The SAR DT's consideration of comments is provided in blue text immediately under each question.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact Tom Vandervort in the NERC office at 609-452-8060 or at [tom.vandervort@nerc.com](mailto:tom.vandervort@nerc.com). You can also contact either the Director of Standards, Tim Gallagher at 609-452-8060 or at [tim.Gallagher@nerc.com](mailto:tim.Gallagher@nerc.com), or Maureen Long at 305-891-5497 or at [spm@nerc.com](mailto:spm@nerc.com).

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Company	Ready to be developed into a standard?		Comments
	YES	NO	
AEP	X		There is a need and the scope is fine as it is
BPA		X	<p>Regarding the Detailed Description:</p> <ol style="list-style-type: none"> <li>Some of the requirements are the responsibility of the Reliability Coordinator and some are the responsibility of the Transmission Provider. The requirements need to clearly delineate the responsibilities of Transmission Provider vs. Reliability Coordinator. <i>Consideration:</i> We appreciate your comments. We recognize that confusing terminology has been used to describe the reliability functions in the last year. The functions in the new standards will be applied to the functions in the Functional Model. The Reliability Coordinator is not one of these functions. In the standard, each requirement will be clearly assigned to one of the functions. The Transmission Service Provider may have some supporting duties, but will not be responsible for complying with the measures in this standard, and is therefore, not listed as one of the functions for which this standard will apply.</li> <li>A requirement for conformance to NERC Reliability Criteria should be included. <i>Consideration:</i> This is a very good point. This requirement is expected to be addressed within reliability legislation or in a formal agreement between NERC and the involved entities and is outside the SAR process.</li> <li>In the wording for the first bullet regarding Real-Time Monitoring, the words "and expected" should be deleted. Expected conditions are part of the data gathered for the reliability analysis covered under the second bullet, rather than for Real-Time Monitoring. <i>Consideration:</i> The SAR will be revised to eliminate the phrase, "as expected."</li> </ol>

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Company	Ready to be developed into a standard?		Comments
	YES	NO	
California ISO		X	<p>Add, under the detailed description, Third bullet "Performing Corrective Actions to Mitigate Limit Violations", "Have a mitigation plan that does not require a neighboring utility or Reliability Authority to take any unplanned actions."</p> <p><i>Consideration:</i></p> <p>This is an important aspect of good utility practice. We expect this to be addressed in the Coordinating Operations SAR and will give this comment to that SAR DT.</p>
Calpine	X		
Duke Power Gen	X		
Duke Power	X		
ECAR (for 16 companies)		X	<p>Each requirement in the detailed description should have an objective or desired outcome. For example the existing SAR has the following listing under the Detailed Description:</p> <ul style="list-style-type: none"> <li>+ Performing corrective actions to mitigate limit violations</li> <li>- Have a mitigation plan</li> </ul> <p>A possible rewrite to include an objective or desired outcome would be</p> <ul style="list-style-type: none"> <li>+ Performing corrective actions to mitigate limit violations</li> <li>- Have a mitigation plan that can be activated and is expected to restore the system to within limits in a specified time frame.</li> </ul> <p>Having a mitigation plan of 'say a prayer' satisfies the original requirement. Each entry in the Detailed Description needs an objective or desired outcome.</p> <p><i>Consideration:</i></p> <p>This level of detail will be developed as part of the drafting of the standard. A team of industry technical subject matter experts will work on this and we will pass this comment on to them for their consideration.</p>
Entergy	X		

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

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Company	Ready to be developed into a standard?		Comments
	YES	NO	
Entergy Services	X		
Entergy Nuclear Northeast			There is a need and the scope is fine as it is
Exelon	X		
Illinois Power		X	See Comment A <i>Consideration: See Comment A</i>
MAAC Region	X		

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Company	Ready to be developed into a standard?		Comments
	YES	NO	
Manitoba Hydro		X	<p>Standards arising from this SAR must apply to all entities operating in the system. In reality, this means the following:</p> <ul style="list-style-type: none"> <li>- the Balancing Authority has obligations to ensure correct schedules and ensure resource allocations which avoid limits</li> <li>- the Interchange Authority is required to ensure transmission line limits are respected</li> <li>- the Generator is required to adhere to limits and expectations (i.e. providing Q)</li> <li>- the Load Serving Entities will be required to drop load if required.</li> </ul> <p><b>Consideration:</b></p> <p>Taken as a whole, the 11 SARs currently under development address these issues partially. The BA is addressed in the Balance Resources and Demand SAR. Generators and LSEs are expected to have contractual arrangements with the Reliability Authority (as part of the certification of the RA). The requirement to establish transfer capability is in the Determine Facility Ratings SAR, as stated in the Brief Description footnote. This SAR states the requirements to monitor and assess the transmission system within these limits.</p> <p>Reliability principle 3 also applies – frequency is another element of operation that needs to stay within limits.</p> <p><b>Consideration:</b></p> <p>Frequency control is addressed within the Balance Resources and Demand SAR.</p> <p>The standard should also address the supply of critical information</p> <p><b>Consideration:</b></p> <p>We agree that this is important and necessary to include in the appropriate SAR. This SAR DT expects “the supply of critical information” to be addressed in the Coordinating Operations SAR and will give this comment to that SAR DT.</p>

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Company	Ready to be developed into a standard?		Comments
	YES	NO	
			<p>Other Comments:</p> <p>Generators and Loads are to be addressed in the Coordination of Operations SAR. These entities can also affect reliability of operation as they are tightly connected and a failure to do the right thing by either of these entities can result in operation outside of transmission system limits. Therefore these entities need to be included in this SAR to ensure that they comply to instructions provided by the operator and follow commitments made at the scheduling stage.</p> <p><i>Consideration:</i></p> <p>The SAR DT notes the commenter’s concern. Generators and Loads are not aspects of this SAR. The requirements that Generators and Loads comply with operating orders issued by higher level functions (per the Functional Model) are expected to be addressed in Agreements with those higher level functions. The Certification Requirements for the Reliability Authority, Balancing Authority, Interchange Authority and Transmission Operator are all expected to include a list of agreements that must be in place as a condition for being awarded certification.</p>
Michigan Electric Coordinated Systems (MECS) Control Area	X		
Mirant Americas Energy Marketing	X		
National Grid USA	X		
New England ISO	X		

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Company	Ready to be developed into a standard?		Comments
	YES	NO	
ONCOR	X		<p>There are two important dimensions missed in the Purpose/Brief Description. 1) Protect transmission equipment from damage due to overloading and 2) protect public health, safety, welfare or national security. (this is spelled out in the OSPM) The Requirement - corrective action to mitigate limit violations addresses these and other dimensions of this proposed standard.</p> <p><i>Consideration:</i></p> <p>This must be addressed, however, this falls within the scope of another SAR. The parameters that establish the transmission operating system limits are addressed in the Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR.</p> <p>Relationships among RA, T Operator, T Owner, TSP - need to be identified and addressed as well as data requirements from market participants necessary for monitoring and analysis. While these may be provided through Certification or other Standards, this standard can not be done without those relationships/linkages identified and in place. It IS unclear to me if this is part of the SAR, Standard DT, or some other responsibility.</p> <p><i>Consideration:</i></p> <p>In the new standard's making process, terminology can be confusing and "where everything is being addressed" is not obvious at times. At this point, we expect that the Certification standards will include requirements that the RA, BA, IA and TOP have agreements in place with lower level functions. These agreements are expected to outline the operating responsibilities and authorities as they relate to controlling operations to maintain reliability.</p>
PGE	X		



**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Company	Ready to be developed into a standard?		Comments
	YES	NO	
PSEG			<p>This may be a glitch in the process. The 'yes' to "Does the proposed Standard comply with all the Market Interface Principles" is premature. The actual wording of the standard may in fact violate Market Interface Principle #4. Until the Standard is final, we can't answer the question!!</p> <p><i>Consideration:</i></p> <p>There is a mechanism in the standards-making process which addresses this possibility. The standards development process requires that the Market Interface Principles be reviewed and considered before the Standards Authorization Committee (SAC) approves the initial posting of a SAR. This is intended to prohibit the development of standards that will have an unnecessary adverse impact on markets. If, during the standards development process, a SAR or draft standard looks as though it were going to have an unnecessary adverse impact on markets, you should submit a specific comment highlighting why you feel this way. During each of its meetings, the SAC asks if there have been any challenges to the integrity of the standards development process, and such a comment would be brought forward to the SAC for their consideration. If the SAC reviewed the comment and felt that it were justified, the SAC has the authority to take corrective action by directing that the SAR be revised, withdrawn or by rejecting the SAR. If the actions of the SAC don't resolve the conflict, there is an appeals process that can be used to highlight the conflict and bring the conflict to resolution. The appeals process is described in the Standards Process Manual, page 23.</p>
Reliant		X	<p>See Comment B</p> <p><i>Consideration:</i> See Comment B</p>

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Company	Ready to be developed into a standard?		Comments
	YES	NO	
Southern Company Services	X		<p>Assumption that operating limit definition and all associated definitions are captured may leave a void. Under "Brief Description" Performing corrective actions to mitigate limit violations. (assumes limit violations has a definition). Might use performing corrective actions to mitigate exceeding operating limits. Wouldn't the standard apply to Balancing Authority? In integrating plan it should be required to adhere to operating plan taking into consideration system limits?</p> <p><i>Consideration:</i></p> <p>First Sentence: This is addressed in the Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR.</p> <p>Second Sentence: The SAR will be modified to include the suggested language “performing corrective actions to mitigate exceeding operating limits.”</p> <p>Third and Fourth Sentence: The functional model does not assign the responsibility for overseeing reliability to the Balancing Authority. Frequency control is being addressed within the Balance Resources and Demand SAR. Frequency is not one of the limits included in this SAR. Therefore the BA does not have compliance duties associated with this SAR.</p>
SRP		X	<p>See Comment C</p> <p><i>Consideration:</i> See Comment C</p>
We Energies			<p>Expand the scope to include the basic assumptions that establish the authority of the RA and TP to act, the operational requirements to accomplish the standard and so forth. These items are assumed to be covered in the Certification requirements. Also the 3 related SAR's are not developed yet and it is difficult to have confidence that they will mesh with this one.</p> <p><i>Consideration:</i></p> <p>The responsibilities of the RA and TP to take actions are anticipated to be included in the Certification Requirements SARs for those functions. Those SARs should be posted in early October and we encourage you to submit specific comments on this aspect.</p>
WECC	X		<p>See Comment D</p> <p><i>Consideration:</i> See Comment D</p>

**Comment A (Illinois Power)**

Illinois Power is still concerned, as it was in its comments on the initial draft of the SAR, that the SAR still includes a number of references to HOW. To correct this, IP suggests the following changes.

**Suggested changes to the Brief Description:**

This standard requires adherence to established operating limits<sup>1</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Requirements shall address:

- Documentation of operating limits identified to prevent instability, uncontrolled separation or cascading outages readily available to the Reliability Authority and Transmission Operator

***Consideration:***

The Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR is expected to address and include these requirements.

- Real time monitoring of necessary system parameters against the identified operating limits
- Performing short-term and real-time transmission reliability analyses relative to the identified operating limits
- Performing corrective actions, including identification and use of operating guides to mitigate limit violations
- Keeping records and filing reports

<sup>1</sup> These are the limits established through the standard, “Determine Facility Ratings, Operating Limits and Transfer Capabilities” that are further identified to prevent instability, uncontrolled separation or cascading outages

**Suggested Changes to the Detailed Description:**

This standard requires that the Reliability Authority and Transmission Operator adhere to established operating limits identified to prevent instability, uncontrolled separation or cascading outages.

Requirements shall address:

- 1 Demonstration that the RA and TO have current information on the identified operating limits
- Process in place for updating the RA/TO when changes are made in the identified operating limit

***Consideration:***

The Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR is expected to include these requirements. We will forward these suggestions to that SAR DT.

## Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR

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- 2 Real time monitoring of necessary system parameters against the identified operating limits
  - Monitor parameters that indicate the current and expected state of the identified operating limits transmission system
  - Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system
- 3 Performing short-term and real-time transmission reliability analyses relative to the identified operating limits
  - Collect data needed for performing real time reliability analyses
  - Have the capability to perform necessary studies relative to the identified operating limits
  - Conduct an operating assessment to identify limiting facilities

### *Consideration:*

The second bullet should be addressed in the Certification Requirements for the RA. We will forward this suggestion to the OCTF.

The suggestion to add “relative to the identified operating limits” is welcomed and will be added to the SAR.

- 4 Direct or performing corrective actions to mitigate return the system within the identified operating limits violations
  - Have a mitigation documented plans and operating guides
  - Implement mitigation plans where necessary
- 5 Keeping Maintenance of records and filing reports
  - Document applicable operating guides and their use
  - Log violations and maintain records for some period of time
  - Document instances of exceeding the identified operating limits
  - Document actions taken to limit the risk of instability, uncontrolled separation and cascading outages
  - Make reports required by information to NERC based on specified criteria (magnitude, duration, type of violation risk)

### *Consideration:*

The SAR DT used the word “perform” assuming that the named function would either perform the respective action(s) themselves or have an agreement in place that another entity satisfactorily performs the action(s) for them.

Have a documented mitigation plan is an excellent suggestion. The SAR will be modified to reflect this comment. Documentation of Operating Guides is addressed sufficiently within this requirement.

The comment to include a requirement to document instances of exceeding identified operating limits is also very helpful and will be incorporated into the SAR.

- 6 The standard will not address
  - loss of a single device
  - cascading outages
  - security limits that if exceed will not have significant consequences
  - distribution and generation

## Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR

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### *Consideration:*

The Standard DT will address the transmission operating limit parameters that are specified in the Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR. Without knowing these parameters it is premature to incorporate generic exclusionary language as suggested.

With respect to the deletion of the bullet on monitoring the state of tielines, IP does not believe this should be a requirement of this standard. Within the scope of this standard, these lines might only need to be monitored if they were an identified operating limit.

### *Consideration:*

The Transmission Operator has the responsibility to monitor the tielines within its boundaries. Even though there may be transmission lines within the TOP boundary that may not have operating limits, the tie lines are anticipated to have operating limits at all times since these meter points connect to the respective Interconnection.

With respect to the addition of Item 6, IP felt that the decisions by the SAR drafting team, documented in the responses to the comments received on the prior draft of this SAR, to specifically exclude these items from the standard needs to be made a part of the SAR so it is communicated to the standard drafting team.

### *Consideration:*

The SAR DT appreciates the comment. The Standard DT will address the transmission operating limit parameters that are specified in the Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR. Without knowing these parameters it is premature to incorporate generic exclusionary language as suggested.

IP also believes that Reliability Principle 4 applies since the standard would address plans for emergency operation

### *Consideration:*

The Prepare for and Respond to Abnormal or Emergency Conditions SAR addresses emergency operation. This SAR is bounded for normal operations.

### **Comment B (Reliant)**

It still appears that this SAR is merely a set of procedures to implement limits that will be established in another SAR, the FACILITY RATINGS SAR.

Although there is certainly a need to have procedures to ensure that Facility Ratings, Operating Limits, and Transfer Capabilities are not violated, Reliant still questions whether it is appropriate to embark on a distinct STANDARD to enforce those limits? What then would be the enforcement mechanism for the FACILITY RATINGS Standard? Could it possibly be:

- 1) Real time monitoring of system parameters against operating limits
  - Monitor parameters that indicate the current and expected state of the transmission system
  - Monitor parameters that indicate the current and expected state of tie lines to other systems and of the overall interconnected transmission system
- 2) Performing short-term and real-time transmission reliability analyses
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- 3) Performing corrective actions to mitigate limit violations
  - Have a mitigation plan
  - Implement mitigation plan where necessary
- 4) Keeping records and filing reports
  - Log violations and maintain records for some period of time
  - Report information to NERC based on specified criteria (magnitude, duration, type of violation)

These of course are conveniently the items in the Detailed Description of the operate Within Transmission Limits SAR

#### ***Consideration:***

The structure of the eleven initial SARs is outside of the responsibilities of this SAR DT. Your comment is appreciated. However, at this time, the Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR addresses more than just operating limits. If the Determine Facility Ratings, Operating Limits and Transfer Capabilities SAR is eventually broken into three separate SARs, then the comment takes on more importance.

### **Comment C (SRP)**

SARs, per the Standards manual, are supposed to define the scope of the standard. Standards are the requirements that necessary to ensure the NERC reliability principles are met. Thus the SAR should provide us enough information, that is at least the requirements, so the industry and the SAC can judge whether standard as described in the SAR is acceptable.

The brief and detailed description says what the "requirements shall address" not what they are. The only statement that comes close to a requirement is the SAR says the standard requires adherence to established limits. What does that mean? The title say more about the standard than the description.

This SAR falls short and needs to be redrafted.

No. 2 I really can not address the second question because as indicated above, I do not know what the requirements of the standard are. The WECC RMS standard can be used as an example of requirements should be.

Other comments:

1. Once again not being able to know the specifics of what's proposed it is hard to know what is proposed.

#### ***Consideration:***

The SAR DT purpose is to assist the requester in developing and enhancing a specific standard scope in accordance with the OSPM. It is the SAR DT understanding that the Standard DT will fill in the details and you will have an opportunity to comment on the details of the standard through public postings.

2. Page SAR-4, For record keeping the correct language is to say the records will be maintained for the "retention period".

#### ***Consideration:***

The SAR will be modified to reflect the "retention period."

3. Page SAR-4, Under record keeping the reporting of security violations should be reported to reliability authorities and the region(s) as well as NERC.

#### ***Consideration:***

The SAR DT believes that at this time, NERC is the only designated recipient of the SAR specific data. Currently this is a NERC standard for NERC reliability issues. Through future data sharing agreements, the SAR DT is confident the data will be shared and appropriate modifications will be made to the standard.

4. On page SAR-6 sections of the operating policies that will be retired are listed.

a. What are these policies? Is everything in these sections to be retired? Do we have to go and research the policies to know what is being proposed? More information should be given about what is to be deleted and we should not have to go look for it.

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b. If all of the listed sections are retired, is there any other material in these sections that should be retained somewhere in some form?

***Consideration:***

The SAR DT has followed the methodology to identify existing policies that will be superseded by this standard. This is the mechanism that is instituted within the new process to retire the existing procedures. Where a section of the policy is listed, the entire section is being proposed for retirement.

c. The major heading of Implementation Plan indicates plans are to be provided for implementation of the proposed standard including training requirements. No such information was provided.

***Consideration:***

What we have provided is just the beginning of the implementation plan. At this point, we are giving the industry a 'heads up' so that everyone can see what we think will be retired when this new standard is implemented. Regions that develop their standards to synchronize with NERC's standards are expected to be particularly interested in this early information.

As the standard is drafted and more is known about the efforts associated with achieving and measuring compliance, the implementation plan will be enhanced. The full implementation plan will become part of the standard that is posted for comment and then for approval.



## **Comment D (WECC)**

The members of the Compliance Process Task Force (CPTF) of the Western Electricity Coordinating Council believe the purpose of the Operate Within Limit should include:

Actual power flow and net scheduled power flow over an interconnection or transfer path shall be maintained within Operating Transfer Capability (Security) Limits (“OTC”). The purpose of the proposed standard is to prevent actual path flow from exceeding its limit. Operating above a path's limit can result in loss of load, uncontrolled separation, and damage to transmission facilities when a system element (e.g. transmission line) outage occurs. When net schedules exceed the path limit, it can result in inadvertant flow and overloads on other system facilities.

The industry need for major transmission paths is as follows.

Transmission Path Operators, Transmission Owners, and Control Area Operators shall operate major transmisssion paths (the transmission system) within security limits so that instability, uncontrolled separation or cascading outages will not occur as a result of the most severe outage or single contingency. Several widespread system outages have occurred when major path limits were exceeded.

A brief description of the proposed standard is as follows.

Actual power flow or schedules on transmission paths identified by the Regional Reliability Organization shall at no time exceed the OTC for more than 20 minutes for paths that are stability limited, or for more than 30 minutes for paths that are thermally limited.

### ***Consideration:***

The SAR DT appreciates the comments. The details provided in these comments are beyond SAR DT scope. We think the WECC standard is an excellent example of a standard and the Standard DT needs to review it. These comments and your standard will be forwarded onto the Standard DT for their consideration.

A transmission path and the respective limits are no different than any other line and line limit. We will forward the comment to the Standard DT.

## **Other Comments: (WECC)**

*A detailed description of the proposed standard develop by CPTF is as follows.*

### *Operating Transfer Capability Limit Standard*

*Actual power flow and net scheduled power flow over interconnections or transfer paths defined by the Regional Reliability Organization shall be maintained within Operating Transfer Capability Limits ("OTC"). The OTC is the maximum amount of actual power that can be transferred over direct or parallel transmission elements comprising:*

- 1. An interconnection from one Control Area to another Control Area; or*
- 2. A transfer path within a Control Area.*

*The net schedule over an interconnection or transfer path within a Control Area shall not exceed the OTC, regardless of the prevailing actual power flow on the interconnection or transfer path.*

*a. Operating limits. No elements within the interconnection shall be scheduled above continuous operating limits. An element is defined as any generating unit, transmission line, transformer, bus, or piece of electrical equipment involved in the transfer of power within an interconnection.*

*b. Stability. The interconnected power system shall remain stable upon loss of any one single element without system cascading that could result in the successive loss of additional elements. The system voltages shall be within acceptable limits defined in the Regional and NERC Planning Standards. If a single event could cause loss of multiple elements, these shall be considered in lieu of a single element outage. This could occur in exceptional cases such as two lines on the same right-of-way next to an airport. In either case, loss of either single or multiple elements should not cause uncontrolled, widespread collapse of the interconnected power system. For purposes of this section, stability shall include transient stability, post transient stability or dynamic stability whichever is most limiting to OTC.*

*c. System contingency response. Following the outage and before adjustments can be made:*

- (i) No remaining element shall exceed its short-time emergency rating.*
- (ii) The steady-state system voltages shall be within emergency limits.*

*The limiting event shall be determined by conducting power flow and stability studies while simulating various operating conditions. These studies shall be updated as system configurations introduce significant changes in the interconnection.*

### *3. Data Reporting Requirement*

*By no later than 5:00 p.m. on the first Business Day following the day on which an instance of noncompliance occurs or other such date defined by the region, a transmission path operator or owner shall submit to the regional office operating transfer capability data (see attachment 1) for each such instance of noncompliance. On or before the tenth day of each calendar quarter (or such other date specified by the region, the path operator or owner (including entities with no reported instances of noncompliance) shall*

## **Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

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*submit to the regional office a completed OTC summary compliance form (see attachment 2) for the immediately preceding calendar quarter.*

### **4. Compliance Standard**

*Actual power flow on all transmission paths shall at no time exceed the OTC for more than 20 minutes for paths that are stability limited, or for more than 30 minutes for paths that are thermally limited.*

### **5. Noncompliance Levels**

*For each separate incident violating the OTC compliance standard, the level of the violation shall be as set forth in the Noncompliance Levels for Operating Transfer Capability table (Attachment 3):*

### **6. Sanctions**

**For purposes of applying the sanctions for violations of this criterion, the “Sanction Measure” is Normal Path Rating and the “Specified Period” is the most recent calendar month.**

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**Attachment 1**

**Operating Transfer Capability Reporting Form**

<b>1. Transfer Path Operator</b>					
<b>2. Transfer Path Name</b>					
<b>3. Path Number</b>		No.			
<b>4. Flow Direction</b>	Term 1		Term 2		
<b>5. Date and time of incident</b>	Date:		Time:		
<b>6. OTC Limit at time of incident - MW</b>			Time zone:		
<b>7. Actual Path Flow - MW</b>					
<b>8. Scheduled Path Flow - MW</b>					
<b>9. MW over limit</b>			Percent over limit		
<b>10. Duration of incidents - minutes</b>					
<b>11. Type of Limit</b>					

Reporting Instructions:

- Transfer Path Operator - Enter regional acronym for the Transfer Path Operator. (Acronyms and transfer paths for the WECC region are defined in Table 2 (attachment 4).
- Transfer Path Name - Enter name from Table 2 (attachment 4).
- Path Number - Enter path number from Table 2 (attachment 4).
- Flow Direction - Table 2 defines the path to be monitored for reporting purposes, each path must have a Terminal 1 (sending bus or area) name and a Terminal 2 (receiving bus or area) name. Positive flow direction is from Term 1 to Term 2. Use this convention to report scheduled and actual flow. For example, if TOT2 Term 1 was named South, Term 2 was named North, and there was - 700 MW reported on line 7; the flow across TOT2 would be 700 MW North to South.
- Date and time of incident - Date: Enter 2 digits each for Month, Day, and Year. Time: Enter 2 digits each for hour, minute, and second. Time zone enter MST, PST, MAST, PAST, etc.
- Operating Transfer Capability Limit at time of incident - Enter the MW transfer capability at the time of the incident.
- Actual Path Flow at time of incident - Enter the actual value of the MW flow at the 20-minute duration point for flows exceeding a stability limit and at the 30 minute duration point for flows exceeding a thermal limit.
- Scheduled Path Flow at time of incident - Enter the MW scheduled flow from Term 1 to Term 2.
- MW over limit - Line 7 minus Line 6.
- Duration of incident - Time in hours, minutes, and seconds that actual flow exceeded OTC.
- Type of Limit - Enter Stability or Thermal to identify the type of limit for the Path.

Attachment 2

**Operating Transfer Capability Compliance Notification**

1. Reporting Path Operator or Path Owner: \_\_\_\_\_
2. Contact Person's Name: \_\_\_\_\_
3. Contact Person's Phone No.: \_\_\_\_\_
4. Reporting Period: \_\_\_\_\_

5.  ***The Path Operator or Path Owner was fully compliant with the Operating Transfer***  
Capability compliance criteria of RMS for the reporting period.
6.  The Reporting Path Operator or Path Owner is not an operator of one of the transmission paths identified for compliance reporting
7.  The Reporting Path Operator or Path Owner experienced reportable Operating Transfer Capability incidents for the reporting period. The Operating Transfer Capability incidents have been submitted as specified in the detailed compliance reporting instructions.
8.  The Reporting Path Operator or Path Owner experienced reportable Operating Transfer Capability incidents for the reporting period. The Operating Transfer Capability incidents have **not** been submitted as specified in the detailed reporting instructions.

Reporting Instructions:

1. Reporting Path Operator or Path Owner - Enter the acronym for the Path Operator or Path Owner.
2. Contact Person's Name - Enter the name of the reporting Path Operator or Path Owner employee.
3. Contact Person's Phone No. - Enter the employee's telephone number.
4. Reporting Period - Enter the quarter being reported (i.e. July 1 through September 30, 2002).
5. Check the box if no reportable OTC incidents were experienced during the reporting period.
6. Check the box if the Path Operator or Path Owner does not operate one of the major transmission paths identified in the compliance reporting instructions.
7. Enter the number of reportable OTC incidents that were reported by the Path operator or Path Owner for the reporting period.

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8. Enter the number of reportable OTC incidents that were not reported by the Path Operator or Path Owner for the reporting period.

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Attachment 3

**Noncompliance Levels for Operating Transfer Capability**

Thermal Limited Paths:	Limit exceeded for more than 30 minutes, up to 35 minutes	Limit exceeded for more than 35 minutes, up to 40 minutes	Limit exceeded for more than 40 minutes, up to 45 minutes	Limit exceeded for more than 45 minutes
Stability Limited Paths:	Limit exceeded for more than 20 minutes, up to 25 minutes	Limit exceeded for more than 25 minutes, up to 30 minutes	Limit exceeded for more than 30 minutes, up to 35 minutes	Limit exceeded for more than 35 minutes
Percentage by which net scheduled or actual flows <u>exceed</u> OTC*				
greater than 0%, up to and including 5%	Level 1	Level 2	Level 2	Level 3
greater than 5%, up to and including 10%	Level 2	Level 2	Level 3	Level 3
greater than 10%, up to and including 15%	Level 2	Level 3	Level 3	Level 4
greater than 15%, up to and including 20%	Level 3	Level 3	Level 4	Level 4
greater than 20%, up to and including 25%	Level 3	Level 4	Level 4	Level 4
greater than 25%	Level 4	Level 4	Level 4	Level 4

\* measured after 20 continuous minutes of net scheduled or actual flows in excess of OTC.

**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

Attachment 4  
**Table 2 Existing WECC Bulk Power Transmission Paths (BPTP)**  
**(Revised October 20, 2000)**

	<b>PATH NAME*</b>	Path Number	Operating Agent
1.	Alberta - British Columbia	1	BC Hydro
2.	Northwest – Canada	3	BC Hydro
3.	West of Cascades – North	4	BPA
4.	West of Cascades – South	5	BPA
5.	West of Hatwai	6	AVA/BPA
6.	Montana to Northwest	8	NWMT
7.	Idaho to Northwest	14	IPC
8.	South of Los Banos or Midway- Los Banos	15	CISO
9.	Idaho – Sierra	16	SPP
10.	Borah West	17	IPC
11.	Idaho – Montana	18	NWMT
12.	Bridger West	19	PAC
13.	Path C	20	PAC
14.	Southwest of Four Corners	22	APS
15.	PG&E – SPP	24	CISO
16.	Northern – Southern California	26	CISO
17.	Intmntn. Power Project DC Line	27	LADWP
18.	TOT 1A	30	WAPA
19.	TOT 2A	31	WAPA
20.	Pavant – Gonder 230 Kv Intermountain – Gonder 230 kV	32	SPP/LADWP
21.	TOT 2B	34	PAC
22.	TOT 2C	35	NEVP
23.	TOT 3	36	WAPA
24.	TOT 5	39	WAPA
25.	SDGE – CFE	45	CISO/CFE
26.	West of Colorado River (WOR)	46	CISO



**Summary of Comments on Second Posting of Monitor and Assess Short-term Transmission Reliability - Operate Within Transmission System Limits SAR**

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27.	Southern New Mexico (NM1)	47	EPE
28.	Northern New Mexico (NM2)	48	PNM
29.	East of the Colorado River (EOR)	49	APS
30.	Cholla – Pinnacle Peak	50	APS
31.	Southern Navajo	51	APS
32.	Billings – Yellowtail – Crossover Phase Shifter	53 & Crossover/ Yellowtail	NWMT
33.	Brownlee East	55	IPC
34.	Lugo – Victorville 500 kV	61	CISO/LDWP
35.	Pacific DC Intertie	65	BPA/LADWP
36.	COI	66	BPA/CISO
37.	North of John Day cutplane	73	BPA
38.	Alturas	76	SPP
39.	SCIT**		CISO
40.	COI/PDCI – North of John Day cutplane**		BPA

\* For an explanation of terms, path numbers, and definition for the paths refer to WECC's Path Rating Catalog.

\*\* The SCIT and COI/PDCI-North of John Day Cutplane are paths that are operated in accordance with nomograms identified in WECC's Path Rating Catalog.

**Standard Authorization Request (SAR) Form**

Title of Proposed Standard:	Monitor and Assess Short-term Reliability - Operate Within Transmission System Limits -
Request Date:	March 7, 2002
Authorized for Posting:	March 20, 2002
SAR ID# :	OPER_WITHN_LMTS_01_03

<b>SAR Requestor Information</b>	<b>SAR Type</b> (Put an 'x' in front of one of these selections)	
Name: Jim Byrd (Al DiCaprio as substitute)	X	New Standard
Primary Contact: Al DiCaprio		Revision to existing Standard
Telephone: 610 666-8854 Fax: 610 666-4282		Withdrawal of existing Standard
e-mail: dicapram@pjm.com		Emergency Action

**Purpose/Industry Need**

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Brief Description**

This standard requires adherence to established operating limits<sup>1</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Requirements shall address:

- Real time monitoring of system parameters against operating limits
- Performing short-term and real-time transmission reliability analyses relative to the identified operating limits
- Performing corrective actions to mitigate exceeding operating limits
- Keeping records and filing reports

<sup>1</sup> These are the limits established through the standard, "Determine Facility Ratings, Operating Limits and Transfer Capabilities"

**Reliability Functions**

<b>The Standard will Apply to the Following Functions</b> (Put an 'X' in front of each one that applies)		
X	Reliability Authority	Ensures the reliability of the bulk transmission system within its Security Authority Area. This is the highest reliability authority.
	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
	Interchange Authority	Authorizes valid and balanced Interchange Schedules
	Planning Authority	Plans the bulk electric system
	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
	Transmission Owner	Owns transmission facilities
X	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
	Distribution Provider	Provides and operates the "wires" between the transmission system and the customer
	Generator	Owns and operates generation unit(s) or runs a market for generation products that performs the functions of supplying energy and Interconnected Operations Services
	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required.
	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user

***Reliability and Market Interface Principles***

<b>Applicable Reliability Principles</b> (Put an 'x' in front of all that apply)	
X	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions.
	2. The frequency of interconnected bulk electric systems shall be controlled within defined limits through the balancing of electric supply and demand
X	3. Information necessary for planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably
	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented
X	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems
X	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions
X	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b>	
<i>(Enter 'yes' or 'no')</i>	
	Yes
1.	Interconnected The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy
2.	An Organization Standard shall not give any market participant an unfair competitive advantage
3.	An Organization Standard shall neither mandate nor prohibit any specific market structure
4.	An Organization Standard shall not preclude market solutions to achieving compliance with that Standard
5.	An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards

**Detailed Description**

This standard requires that the Reliability Authority and Transmission Operator adhere to established operating limits.

Requirements shall address:

- Real time monitoring of system parameters against operating limits
  - Monitor parameters that indicate the current state of the transmission system
  - Monitor parameters that indicate the current state of tie lines to other systems and of the overall interconnected transmission system
- Performing short-term and real-time transmission reliability analyses relative to the identified operating limits
  - Collect data needed for performing real time reliability analyses
  - Conduct an operating assessment to identify limiting facilities
- Performing corrective actions to mitigate exceeding operating limits
  - Have a documented mitigation plan
  - Implement mitigation plan where necessary
- Keeping records and filing reports
  - Document instances of exceeding identified operating limits
  - Log violations and maintain records for the retention period
  - Report information to NERC based on specified criteria (e.g. magnitude, duration, type of violation, instances of exceeding limits<sup>2</sup>)

**Related SARs**

<b>SAR ID</b>	<b>Explanation</b>
FACILITY_RATINGS_01_01	The “Determine Facility Ratings, Operating Limits, and Transfer Capabilities” SAR identifies how operating limits are established. The operating limits established within this proposed standard are referenced in the proposed “Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability” standard.
COORD_OPERATONS_01_01	The “Coordinate Operations” SAR identifies what reliability-related information to exchange between Functions. Some of the information collected within the proposed “Operate Within Transmission System Limits - Monitor and Assess Short-term Reliability” standard will be used in the proposed “Coordinate Operations” standard.
ABNML_&_EM_COND_01_01	The “Prepare for and respond to Abnormal or Emergency Conditions” SAR will be implemented where this one stops. The two SARs are related.

<sup>2</sup> If an area bounces over a limit, whether it is caused by a contingency or not, this doesn’t need to be reported to NERC as long as the area re-prepares within the NERC guidelines. If the NERC criteria are not met, then these violations should be reported.

***Regional Differences***

<b><i>Region</i></b>	<b><i>Explanation</i></b>
ECAR	None identified
ERCOT	None identified
FRCC	None identified
MAAC	None identified
MAIN	None identified
MAPP	None identified
NPCC	None identified
SERC	None identified
SPP	None identified
WECC	None identified

***Interconnection Differences***

<b><i>Interconnection</i></b>	<b><i>Explanation</i></b>
Eastern	None Identified
Western	None Identified
ERCOT	None Identified

***Implementation Plan***

<b>Description</b>
<p><b><i>The following sections of Operating Policies should be retired when this standard is implemented:</i></b></p> <p>Policy 2 – Transmission</p> <ul style="list-style-type: none"><li>– Standard A.1.</li><li>– Standard A.1.1.</li><li>– Standard A.1.2</li><li>– Standard A.2.</li><li>– Standard A.2.1.</li><li>– Standard A.2.2.</li><li>– Requirement A.1.</li><li>– Requirement A.1.1.</li><li>– Requirement A.1.2.</li><li>– Requirement B.1.</li><li>– Requirement B.5.</li></ul> <p>Policy 9 – Security Coordinator Procedures</p> <ul style="list-style-type: none"><li>– Introduction – Introductory paragraph and second and third bullets</li><li>– Requirement A.1.</li><li>– Requirement A.1.2.</li><li>– Requirement C. 3.1.</li><li>– Requirement C.3.2.</li><li>– Requirement C.3.2.1.</li><li>– Requirement C.3.2.1.1.</li></ul> <p>Policy 4 – System Coordination</p> <ul style="list-style-type: none"><li>– Section A (<i>Section A needs careful scrutiny by numerous SAR Drafting Teams</i>)</li></ul> <p>Policy 5 – Emergency Operations</p> <ul style="list-style-type: none"><li>– Section C</li><li>– Section D</li></ul>

**SAR: Monitor and Assess Short-term Trans Reliability – Operate Within Transmission Limits**

<b>SAR Drafting Team</b>	
<b>Chairman</b>	James Case
<b>Secretary</b>	Tom Vandervort
<b>Requestor</b>	Jim Byrd/Al DiCaprio
<b>Industry Representatives</b>	Daniel Boezio Timothy Cronin Roger Farrugia Mark Fidrych Tony Jankowski Drew Kovalak Bill Lundin Ellis Rankin Edward Riley Richard Schneider Toni Timberman Stanley Williams



**200. Monitor and Assess Short-term Transmission Reliability – Operate within Transmission Limits**

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**201 (a) Requirement**

The Reliability Authority (RA) shall monitor (in real time<sup>1</sup>) system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data<sup>2</sup> associated with those limits.

**201 (b) Measure(s)**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**201 (c) Outcome(s)**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**201 (d) Regional Differences**

None identified.

**201 (e) Compliance Monitoring Process**

The Reliability Authority shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance.

The performance-reset period shall be one year. The Reliability Authority shall keep data on limits for three years. The Compliance Monitor shall keep audited data for three years.

The RA shall have the following available upon the request of the Compliance Monitor:

- Real time system operating limits identified
- Display(s) with real time data associated with real time system operating limits

**201 (f) Levels of Non-compliance**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

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<sup>1</sup> Real time could be continuous analog data or data sampled at a rate greater than or equal to one minute (this sampling rate is compatible with the characteristics of a steam generator and is consistent with the NERC control performance measures.)

<sup>2</sup> Data may be real, state-estimated or other calculated values

**Draft Standard 200 – Version A With Each Requirement Listed Separately**

**Monitor and Assess Short-term Transmission Reliability – Operate within Transmission Limits**

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**201 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**202 (a) Requirement**

The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**202(b) Measure(s)**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**202 (c) Outcome(s)**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**202 (d) Regional Difference(s)**

None identified.

**202 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance. The performance reset period shall be one year. The Transmission Operator shall keep data on limits for three years. The Compliance Monitor shall keep audited data for three years.

The TOP shall have the following available upon the request of the Compliance Monitor:

- Real time system operating limits identified
- Display(s) with real time data associated with real time system operating limits

**202 (f) Levels of Non-compliance**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**202 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**203 (a) Requirement**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>3</sup>

The RA shall specify when to supply data (based on the RA’s hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**203 (b) Measure(s)**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**203 (c) Outcome(s)**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>4</sup> The RA shall maintain a record that shows data requested but not received.

**203 (d) Regional Difference(s)**

None identified.

**203 (e) Compliance Monitoring Process**

The Reliability Authority shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance.

The performance-reset period shall be one year. The Reliability Authority shall keep specification document(s) for three years. The Compliance Monitor shall keep audited data for three years.

The RA shall have available upon request of its Compliance Monitor:

- Specification for data needed to implement changes to existing system models
- Specification for data needed to implement changes for real time monitoring
- Record of correspondence requesting new data needed and indication of data not received

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<sup>3</sup> Reliability analyses includes both real time and operational planning analyses

<sup>4</sup> Reliability analyses includes both real time and operational planning analyses

**203 (f) Levels of Non-compliance**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**203 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**204 (a) Requirement**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>5</sup>

The TOP shall specify when to supply data (based on the TOP’s hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**204 (b) Measure(s)**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**204 (c) Outcome(s)**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses<sup>6</sup>. The TOP shall maintain a record that shows data requested but not received.

**204 (d) Regional Differences**

None identified.

**205 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance.

The performance-reset period shall be one year. The TOP shall keep specification document(s) for three years. The Compliance Monitor shall keep audited data for three years.

The TOP shall have available upon request of its Compliance Monitor:

- Specification for data needed to implement changes to existing system models
- Specification for data needed to implement changes for real time monitoring
- Record of correspondence requesting new data needed and identification of data not received

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<sup>5</sup> Reliability analyses includes both real time and operational planning analyses

<sup>6</sup> Reliability analyses includes both real time and operational planning analyses

**Draft Standard 200 – Version A With Each Requirement Listed Separately**

**Monitor and Assess Short-term Transmission Reliability – Operate within Transmission Limits**

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**205 (f) Levels of Non-compliance**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**204 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**205 (a) Requirement**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**205 (b) (Measure(s))**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**205 (c) Outcome(s)**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**205 (d) Regional Difference(s)**

None identified.

**205 (e) Compliance Monitoring Process**

The RA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance-reset period is 12 months without a violation from the time of the last violation. The RA shall provide data to its associated RAs and/or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**205 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**205 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)



**206 (a) Requirement**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**206 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**206 (c) Outcome(s)**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**206 (d) Regional Differences**

None identified.

**206 (e) Compliance Monitoring Process**

The BA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance-reset period is 12 months without a violation from the time of the last violation. The BA shall provide data to its associated RA and/or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**206 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**206 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**207 (a) Requirement**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**207 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**207 (c) Outcome(s)**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**207 (d) Regional Difference(s)**

None identified.

**207 (e) Compliance Monitoring Process**

The IA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance-reset period is 12 months without a violation from the time of the last violation. The IA shall provide data to its associated RA and/ or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**207 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**207 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**208 (a) Requirement**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**208 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**208 (c) Outcome(s)**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**208 (d) Regional Difference(s)**

None identified.

**208 (e) Compliance Monitoring Process**

The TOW shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance reset period is 12 months without a violation from the time of the last violation. The TOW shall provide data to its associated RA and/or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**208 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**208 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**209 (a) Requirement**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**209 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**209 (c) Outcome(s)**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**209 (d) Regional Difference(s)**

None identified.

**209 (e) Compliance Monitoring Process**

The Generator Owner shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance reset period is 12 months without a violation from the time of the last violation. The Generator Owner shall provide data to its associated RA and/or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**209 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**209 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**210 (a) Requirement**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**210 (b) Measure(s)**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**210 (c) Outcome(s)**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**210 (d) Regional Difference(s)**

None identified

**210 (e) Compliance Monitoring Process**

The Reliability Authority shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance. The performance reset period shall be one year. The Compliance Monitor shall keep audited data for three years.

The RA shall demonstrate that analysis program(s) run(s) when requested by the Compliance Monitor.

**210 (f) Levels of Non-compliance**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**210 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**211 (a) Requirement**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**211 (b) Measure(s)**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**211 (c) Outcome(s)**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**211 (d) Regional Difference(s)**

None identified.

**211 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance. The performance reset period shall be one year. The Compliance Monitor shall keep audited data for three years.

The TOP shall demonstrate that analysis program(s) run(s) when requested by the Compliance Monitor.

**211 (f) Levels of Non-compliance**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**211 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**212 (a) Requirement**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**212 (b) Measure(s)**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**212 (c) Outcome(s)**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**212 (d) Regional Difference(s)**

None identified.

**212 (e) Compliance Monitoring Process**

The Reliability Authority shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance. The performance reset period shall be one year. The Compliance Monitor shall keep audited data for three years.

The RA shall have documentation available upon request of the Compliance Monitor that shows that actions were taken when there was an identified problem (that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**212 (f) Levels of Non-compliance**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**212 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**213 (a) Requirement**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**213 (b) Measure(s)**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**213 (c) Outcome(s)**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**213 (d) Regional Difference(s)**

None identified.

**213 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance.

The performance reset period shall be one year. The Compliance Monitor shall keep audited data for three years.

The TOP shall have documentation available upon request of the Compliance Monitor that shows that actions were taken when there was an identified problem (that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**213 (f) Levels of Non-compliance**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**213 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)



**214 (a) Requirement**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**214 (b) Measure(s)**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**214 (c) Outcome(s)**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**214 (d) Regional Difference(s)**

None Identified

**214 (e) Compliance Monitoring Process**

The RA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting. The compliance reset period is 12 months. The Reliability Authority shall keep the mitigation plan and/or procedure for three years.

The RA shall provide its mitigation plan and/or procedures to its Compliance Monitor. The Compliance Monitor shall evaluate the mitigation plan and/or procedures.

**214 (f) Levels of Non-compliance**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**214 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**215 (a) Requirement**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**215 (b) Measure(s)**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**215 (c) Outcome(s)**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**215 (d) Regional Difference(s)**

None identified.

**215 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting. The compliance reset period is 12 months. The TOP shall keep the mitigation plan and/or procedure for three years.

The TOP shall provide its mitigation plan and/or procedures to its Compliance Monitor. The Compliance Monitor shall evaluate the mitigation plan and/or procedures.

**215 (f) Levels of Non-compliance**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**215 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**216 (a) Requirement**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**216 (b) Measure(s)**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**216 (c) Outcome(s)**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceeded for a specified time period. The report shall be filed within 72 hours of the event.

**216 (d) Regional Difference(s)**

None identified.

**216 (e) Compliance Monitoring Process**

The RA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting. The compliance reset period is 12 months. The RA shall keep logs and reports for three years.

The RA shall provide the following data when requested by its Compliance Monitor:

- Documentation for all cases where system operating limits were exceeded (usually EMS historical data)
- Daily operating logs and supporting documentation for each system operating limit violation (identified system operating limit exceeded for a specified period of time)
- Complete report indicating event has occurred with description of event

**216 (f) Levels of Non-compliance**

1. Report filed on time but incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation

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– An incident occurred and there was no report within 72 hours

4. Documentation didn't exist

**216 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**217 (a) Requirement**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**217 (b) Measure(s)**

Data exists and is retrievable

**217 (c) Outcome(s)**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**217 (d) Regional Difference(s)**

None identified.

**217 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting.

The compliance reset period is 12 months. The TOP shall keep data for three years.

The TOP shall provide its Compliance Monitor with documentation for all cases where system operating limits were exceeded (usually EMS historical data).

**217 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**217 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

### **Sanctions Table**

The following table is an approved table of Compliance Sanctions. This table of sanctions was developed by the Compliance Subcommittee as part of the NERC Compliance Program and was approved by the NERC Board of Trustees. The SDT does not need to develop new sanctions, but needs to be cognizant of the sanctions that will be applied for the various levels of non-compliance.

Levels of non-compliance are tied to this Enforcement Matrix. The matrix is divided into four levels of increasing non-compliance vertically and the number of violations in a defined period at a given level horizontally.

In the enforcement matrix, note that there are three sanctions that can be used: a letter, a fixed fine, and a \$\$ per MW fine.

#### **Letter**

The letter is a sanction used to notify company executives, Regional officers, and regulators when an entity is non-compliance. The distribution of the letter varies depending on the severity of the non-compliance. It is used first to bring non-compliance to light to people who can influence the operation to become compliant.

- Letter (A) - Letter to the entity's Vice President Level or equivalent informing the entity of non-compliance, with copies to the data reporting contact, and the entity's highest ranking Regional Council representative.
- Letter (B) - Letter to the entity's Chief Executive Officer or equivalent, with copies to the data reporting contact, the entity's highest ranking Regional Council representative, and the Vice President over the area in which non-compliance occurred.
- Letter (C) - Letter to the entity's Chief Executive Officer and Chairman of the Board, with copies to the NERC President, regulatory authorities having jurisdiction over the non-compliant entity if requested by such regulatory authorities, the data reporting contact, the entity's highest ranking Regional Council representative, and the Vice President over the area in which non-compliance occurred.

#### **Fixed Dollars**

This sanction is used when a letter is not enough and a stronger message is desired. Fixed dollars are typically assigned as a one-time fine that is ideal for measures involving planning-related standards. Many planning actions use forward-looking assumptions. If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome.

#### **Dollars per MW**

Dollars per MW sanctions are oriented toward operationally-based standards. The MW can be load, generation, or flow on a line. Reasonableness of a sanction needs to be figured into assessing \$/MW penalties. Assessing large financial penalties is not the goal, but sending a message with proper emphasis on \$\$\$ can be controlled with the multiplier.

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<b>Occurrence Period Category</b>	<b>Number of Violations in Occurrence Period at a Given Level</b>			
1 <sup>st</sup> Period of Violations (Fully Compliant Last Period)	1	2	3	4 or more
2 <sup>nd</sup> Consecutive Period of Violations		1	2	3 or more
		\$ Sanction from Table; Letter ( C ) only if Letter (B) previously sent		
3 <sup>rd</sup> Consecutive Period of Violations		1	2 or more	
		\$ Sanction from Table; Letter ( C ) only if Letter (B) previously sent		
4 <sup>th</sup> or greater Consecutive Period of Violations		1		
		\$ Sanction from Table; Letter ( C )		

<b>Level of Non-Compliance</b>	<b>Sanctions Associated with Non-compliance</b>			
Level 1	Letter (A)	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW
Level 2	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW
Level 3	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW
Level 4	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW	Letter (B) and \$10,000 or \$10 Per MW

**Interpreting the Tables:**

- These tables address penalties for violations of the same measure occurring in consecutive compliance reporting periods.
- If a participant has non-compliant performance in consecutive compliance reporting periods, the sanctions applied are more punitive.

**200. Monitor and Assess Short-term Transmission Reliability – Operate within Transmission Limits**

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**201 (a) Requirement**

The Reliability Authority (RA) shall monitor and assess system operating limits against actual real time<sup>1</sup> data<sup>2</sup> associated with those limits. The RA shall use the results of analyses to take actions to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall:

- Monitor (in real time) the system operating limits (identified to prevent cascading outages, instability, uncontrolled separation that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- Specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses<sup>3</sup>
- Specify when to supply data (based on the RA’s hardware and software requirements, and the time needed to do the operational planning analysis).
- Notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.
- Perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- Use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent and/or mitigate an actual or potential problem that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Document actions taken.

**201 (b) Measures**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits
3. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and that data be technically accurate and complete.)

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<sup>1</sup> Real time could be continuous analog data or data sampled at a rate greater than or equal to one minute (this sampling rate is compatible with the characteristics of a steam generator and is consistent with the NERC control performance measures.)

<sup>2</sup> Data may be real, state-estimated or other calculated values

<sup>3</sup> Reliability analyses includes both real time and operational planning analyses



## **Draft Standard 200 – Version B With Related Requirements Combined**

### **Monitor and Assess Short-term Transmission Reliability – Operate within Transmission Limits**

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4. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and that data be technically accurate and complete.)
5. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.
6. Reliability analysis program(s) analyze all system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
7. Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
8. Documentation for actions taken to mitigate/prevent identified problem(s) that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

#### **201 (c) Outcomes**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses<sup>4</sup>. The RA shall maintain a record that shows data requested but not received.

The RA shall run reliability analysis program(s) and the programs shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

#### **201 (d) Regional Differences**

None identified.

#### **201 (e) Compliance Monitoring Process**

The Reliability Authority shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance.

The performance-reset period shall be one year. The Reliability Authority shall keep data for three years. The Compliance Monitor shall keep audited data for three years.

The RA shall have the following available upon the request of the Compliance Monitor:

- Real time system operating limits identified
- Display(s) with real time data associated with real time system operating limits

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<sup>4</sup> Reliability analyses includes both real time and operational planning analyses

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- Specification for data needed to implement changes to existing system models
- Specification for data needed to implement changes for real time monitoring
- Record of correspondence requesting new data needed and not received
- Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation and cascading outages that adversely impact the reliability of the bulk transmission system.
- Reliability analysis program(s) analyze(s) all system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- Documentation for actions taken when there was an identified problem (that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

#### **201 (f) Levels of Non-compliance**

1. Any one of the following:
  - Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate value was monitored for up to 24 hours
  - Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
  - Reliability analysis did not run when requested, but ran within 8 hours
2. Any one of the following:
  - Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
  - Data was not requested
  - There was no record of specification
  - Reliability analysis did not run when requested, but ran in 8 - 24 hours
  - Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no system operating limit violations occurred.
3. Any one of the following:
  - Reliability analysis did not run when requested, and did not run within 24 hrs
  - No analysis tool was available for use by system operators
  - Monitoring and/or reliability analyses identified a problem – no actions(or incorrect actions) were taken but no violation occurred
  - There was a system operating limit violation, but it did not result in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system.
4. Any one of the following:
  - System operating limit(s) were not being compared to actual data
  - System operating limit was violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system.

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**201 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

### **202 (a) Requirement**

The Transmission Operator (TOP) shall monitor and assess system operating limits against actual real time data associated with those limits and shall use the results of analyses to take actions to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall:

- Monitor (in real time) the system operating limits (identified to prevent instability, cascading outages, or uncontrolled separation that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- Specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses<sup>5</sup>
- Specify when to supply data (based on the TOP’s hardware and software requirements, and the time needed to do the operational planning analysis).
- Notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.
- Perform short-term reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- Use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent and/or mitigate an actual or potential problem that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Document actions taken.

### **202 (b) Measures**

1. System operating limits are available in real time
2. Actual real time data available in a form that can be compared to the system operating limits
3. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
4. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
5. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.
6. Reliability analysis program(s) analyze(s) all system operating limits that, if exceeded, could cause instability, uncontrolled separation and cascading outages that adversely impact the reliability of the bulk transmission system.
7. Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation and cascading outages that adversely impact the reliability of the bulk transmission system.

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<sup>5</sup> Reliability analyses includes both real time and operational planning analyses

9. Documentation shows actions taken to mitigate/prevent identified problem(s) that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**202 (c) Outcome(s)**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses<sup>6</sup>

The TOP shall run reliability analysis program(s) that identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**202 (d) Regional Differences**

None identified.

**202 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor may also use Periodic Reviews (on site, per a schedule), with Spot Reports/Reviews and Triggered Investigations to assess performance.

The performance-reset period shall be one year. The TOP shall keep data for three years. The Compliance Monitor shall keep audited data for three years.

The TOP shall have the following available upon the request of the Compliance Monitor:

- Real time system operating limits identified
- Display(s) with real time data associated with real time system operating limits
- Specification for data needed to implement changes to existing system models
- Specification for data needed to implement changes for real time monitoring
- Record of correspondence requesting new data needed with identification of data not received
- Reliability analysis program(s) to analyze all system operating limits that, if exceeded, could cause instability, uncontrolled separation and cascading outages that adversely impact the reliability of the bulk transmission system.
- Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation and cascading outages that adversely impact the reliability of the bulk transmission system.

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<sup>6</sup> Reliability analyses includes both real time and operational planning analyses

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- Documentation for actions taken to mitigate/prevent identified problem(s) that could cause instability, uncontrolled separation and cascading outages that adversely impact the reliability of the bulk transmission system.

**201 (f) Levels of Non-compliance**

1. Any one of the following:
  - Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate value was monitored for up to 24 hours
  - Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
  - Reliability analysis did not run when requested, but ran within 8 hours
2. Any one of the following:
  - Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
  - Data was not requested
  - No record of specification
  - Reliability analysis did not run when requested, but ran in 8 - 24 hours
  - Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Any one of the following:
  - Reliability analysis did not run when requested, and did not run within 24 hrs
  - No analysis tool was available for use by system operators
  - Monitoring and/or reliability analyses identified a problem – no actions(or incorrect actions) were taken but no violation occurred
  - A system operating limit was violated but did not result in instability, uncontrolled separation and cascading outages that adversely impacted the reliability of the bulk transmission system.
4. Any one of the following:
  - System operating limit(s) were not being compared to actual data
  - A system operating limit was violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system.

**202 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**203 (a) Requirement**

The Reliability Authority (RA) shall have an approved, documented mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**203 (b) Measure(s)**

There is an approved, documented mitigation plan/procedure(s) that identifies actions the RA shall take to remain/return to within system operating limits

**203 (c) Outcome(s)**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**203 (d) Regional Difference(s)**

None identified.

**203 (e) Compliance Monitoring Process**

The RA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting. The compliance-reset period is 12 months. The Reliability Authority shall keep the mitigation plan and/or procedure for three years.

The RA shall provide its mitigation plan and/or procedures to its Compliance Monitor. The Compliance Monitor shall evaluate the mitigation plan and/or procedures.

**203 (f) Levels of Non-compliance**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**203 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**204 (a) Requirement**

The Transmission Operator (TOP) shall have an approved, documented mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**204 (b) Measure(s)**

There is an approved, documented mitigation plan/procedure(s) that identifies actions the RA shall take to remain/return to within system operating limits

**204 (c) Outcome(s)**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**204 (d) Regional Difference(s)**

None identified.

**203 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting.

The compliance reset period is 12 months. The TOP shall keep the mitigation plan and/or procedure for three years.

The TOP shall provide its mitigation plan and/or procedures to its Compliance Monitor. The Compliance Monitor shall evaluate the mitigation plan and/or procedures.

**204 (f) Levels of Non-compliance**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**204 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)



**205 (a) Requirement**

The Reliability Authority (RA) shall:

1. Document instances of exceeding identified system operating limits.
2. Document and log (daily operating log) violations (instances where a system operating limit has been exceeded for a specified period of time) and maintain the record for at least 3 years)
3. File a report with its Compliance Monitor when a violation has occurred (an identified system operating limit has been exceeded for a specified time period).

**205 (b) Measure(s)**

1. Data exists and is retrievable
2. Record of violations is in existence for at least three years
3. Complete report filed with applicable Compliance Monitor within 72 hours (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**205 (c) Outcome(s)**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The RA shall file the report within 72 hours of the event.

**205 (d) Regional Differences**

None identified.

**205 (e) Compliance Monitoring Process**

The RA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting. The compliance reset period is 12 months. The RA shall keep logs and reports for three years.

The RA shall provide the following data when requested by its Compliance Monitor:

- Documentation for all instances where system operating limits were exceeded (usually EMS historical data)
- Daily operating logs and supporting documentation for each system operating limit violation (identified system operating limit exceeded for a specified period of time)
- Complete report indicating event (identified system operating limit exceeded for a specified period of time) has occurred with description of violation

**205 (f) Levels of Non-compliance**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable

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- Supporting documentation indicated unlogged violation(s)
  - An incident occurred and there was no report within 72 hours
4. One of the following:
- Documentation didn't exist
  - Logs/supporting documentation was not available

**205 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**206 (a) Requirement**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits.

**206 (b) Measure(s)**

Data exists and is retrievable

**206 (c) Outcome(s)**

The TOP shall have retrievable information that documents instances when it exceeds identified system operating limits.

**206 (d) Regional Differences**

None identified.

**206 (e) Compliance Monitoring Process**

The TOP shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and spot reporting.

The compliance reset period is 12 months. The TOP shall keep data for three years.

The TOP shall provide its Compliance Monitor with documentation for all cases where system operating limits were exceeded (usually EMS historical data).

**206 (f) Levels of Non-compliance**

5. Not Applicable
6. Not Applicable
7. Not Applicable
8. Documentation didn't exist

**206 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

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**207 (a) Requirement**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**207 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**207 (c) Outcome(s)**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**207 (d) Regional Differences**

None identified.

**207 (e) Compliance Monitoring Process**

The RA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance reset period is 12 months without a violation from the time of the last violation. The RA shall provide data to its associated RAs and/or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**207 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**207 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

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**208 (a) Requirements**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**208 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**208 (c) Outcome(s)**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**208 (d) Regional Differences**

None identified.

**208 (e) Compliance Monitoring Process**

The BA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance reset period is 12 months without a violation from the time of the last violation. The BA shall provide data to its associated RA and/or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**208 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**208 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

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**209 (a) Requirement**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**209 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**209 (c) Outcome(s)**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**209 (d) Regional Differences**

None identified.

**209 (e) Compliance Monitoring Process**

The IA shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance reset period is 12 months without a violation from the time of the last violation. The IA shall provide data to its associated RA and/or TOP. The RA and/or TOP shall keep data for three years.

**209 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**209 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

**210 (a) Requirement**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**210 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**210 (c) Outcome(s)**

The TOP shall provide data, as requested, to its (associated) RA and/or TOP.

**210 (d) Regional Differences**

None identified.

**210 (e) Compliance Monitoring Process**

The TOW shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance reset period is 12 months without a violation from the time of the last violation. The TOW shall provide data to its associated RA and/or TOP. The RA and/or TOP that requested the data shall keep data for three years.

**210 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**210 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)

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**211 (a) Requirement**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**211 (b) Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**211 (c) Outcome(s)**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**211 (d) Regional Differences**

None identified.

**211 (e) Compliance Monitoring Process**

The Generator Owner shall demonstrate compliance through self-certification with re-certification on a schedule established by the Compliance Monitor. The Compliance Monitor shall ask the requesting RA or TOP to confirm the accuracy and timeliness of the data. Performance shall be measured periodically (on site, per a schedule), with triggered investigations and exception reporting.

The compliance reset period is 12 months without a violation from the time of the last violation. The Generator Owner shall provide data to its associated RA and/or TOP. The RA and/or TOP shall keep data for three years.

**211 (f) Levels of Non-compliance**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**211 (g) Sanctions**

Sanctions shall be applied consistent with the NERC Compliance and Enforcement Matrix (*attached at the end of this draft standard for reference and comment.*)



## **Sanctions Table**

The following table is an approved table of Compliance Sanctions. This table of sanctions was developed by the Compliance Subcommittee as part of the NERC Compliance Program and was approved by the NERC Board of Trustees. The SDT does not need to develop new sanctions, but needs to be cognizant of the sanctions that will be applied for the various levels of non-compliance.

Levels of non-compliance are tied to this Enforcement Matrix. The matrix is divided into four levels of increasing non-compliance vertically and the number of violations in a defined period at a given level horizontally.

In the enforcement matrix, note that there are three sanctions that can be used: a letter, a fixed fine, and a \$\$ per MW fine.

### **Letter**

The letter is a sanction used to notify company executives, Regional officers, and regulators when an entity is non-compliance. The distribution of the letter varies depending on the severity of the non-compliance. It is used first to bring non-compliance to light to people who can influence the operation to become compliant.

- Letter (A) - Letter to the entity's Vice President Level or equivalent informing the entity of non-compliance, with copies to the data reporting contact, and the entity's highest ranking Regional Council representative.
- Letter (B) - Letter to the entity's Chief Executive Officer or equivalent, with copies to the data reporting contact, the entity's highest ranking Regional Council representative, and the Vice President over the area in which non-compliance occurred.
- Letter (C) - Letter to the entity's Chief Executive Officer and Chairman of the Board, with copies to the NERC President, regulatory authorities having jurisdiction over the non-compliant entity if requested by such regulatory authorities, the data reporting contact, the entity's highest ranking Regional Council representative, and the Vice President over the area in which non-compliance occurred.

### **Fixed Dollars**

This sanction is used when a letter is not enough and a stronger message is desired. Fixed dollars are typically assigned as a one-time fine that is ideal for measures involving planning-related standards. Many planning actions use forward-looking assumptions. If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome.

### **Dollars per MW**

Dollars per MW sanctions are oriented toward operationally-based standards. The MW can be load, generation, or flow on a line. Reasonableness of a sanction needs to be figured into assessing \$/MW penalties. Assessing large financial penalties is not the goal, but sending a message with proper emphasis on \$\$\$ can be controlled with the multiplier.

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<b>Occurrence Period Category</b>	<b>Number of Violations in Occurrence Period at a Given Level</b>			
1 <sup>st</sup> Period of Violations (Fully Compliant Last Period)	1	2	3	4 or more
2 <sup>nd</sup> Consecutive Period of Violations		1	2	3 or more
		\$ Sanction from Table; Letter ( C ) only if Letter (B) previously sent		
3 <sup>rd</sup> Consecutive Period of Violations		1	2 or more	
		\$ Sanction from Table; Letter ( C ) only if Letter (B) previously sent		
4 <sup>th</sup> or greater Consecutive Period of Violations		1		
		\$ Sanction from Table; Letter ( C )		

<b>Level of Non-Compliance</b>	<b>Sanctions Associated with Non-compliance</b>			
Level 1	Letter (A)	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW
Level 2	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW
Level 3	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW
Level 4	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW	Letter (B) and \$10,000 or \$10 Per MW

**Interpreting the Tables:**

- These tables address penalties for violations of the same measure occurring in consecutive compliance reporting periods.
- If a participant has non-compliant performance in consecutive compliance reporting periods, the sanctions applied are more punitive.

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**STD Commenter Information (For Individual Commenters)**

Name Joe Minkstein  
 Organization PG&E  
 Industry Segment # 5  
 Telephone 415 973-5977  
 E-mail jem8@pge.com

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

**STD Commenter Information (For Groups Submitting Group Comments)**

<b>Name of Group:</b>	<b>Group Chair:</b>
	<b>Chair Phone:</b>
	<b>Chair Email:</b>

**List of Group Participants that Support These Comments:**

Name	Company	Industry Segment #

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

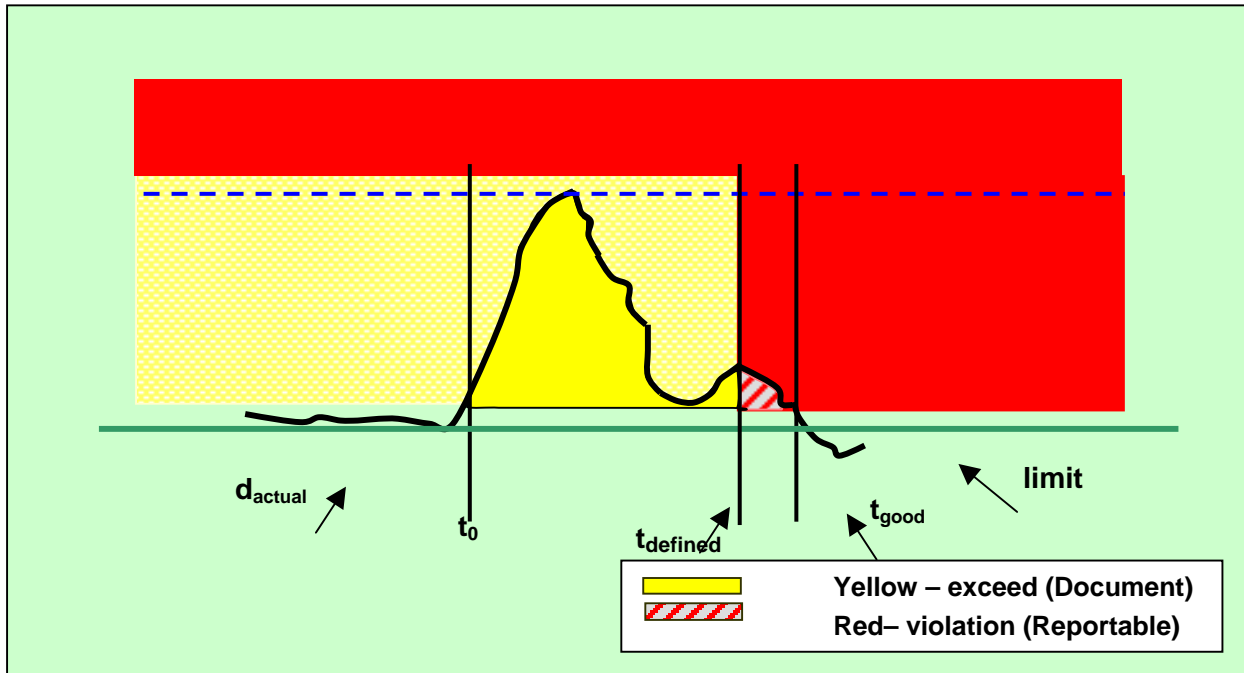
**Do you agree?**

**Yes**

**No**

**Comments:**

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:** As a Generator I may not be aware of all the differences that could occur in various regional interconnections

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** As a Generator, I may not be aware of all requirements that promote grid reliability

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** Version A is streamline and forthright, but version B lays out the requirements in such fashion that an auditee should know what the documentation requirements are and have agreement with an auditor when a finding of non-compliance is reported

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**



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-----Original Message-----

From: Gladish, Lee [mailto:L.Gladish@cwlp.com]

Sent: Monday, March 10, 2003 10:31 AM

To: Tim Gallagher

Subject: Standard Comment-Operate Within Transmission Limits

I have a comment on the very first page of the Draft Standard in 201 (a) Requirement.

The present text requires monitoring limits against real time data. I believe the thought is stated in reverse. What should be monitored is the real time data, against limits. My rationale is that limits are typically static, and don't require "monitoring". Real time data is dynamic and is what needs monitoring against operating limits which typically are fixed.

The same concept also appears in the first indented item under 201(a).

Thanks for the opportunity to comment.

Lee A. Gladish,

Springfield, Ill. CWLP TDU Segment

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Fred Frederick
Organization	Vectren
Industry Segment #	3
Telephone	812-491-4570
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
Name	Company	Industry Segment #

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

**Do you agree?**

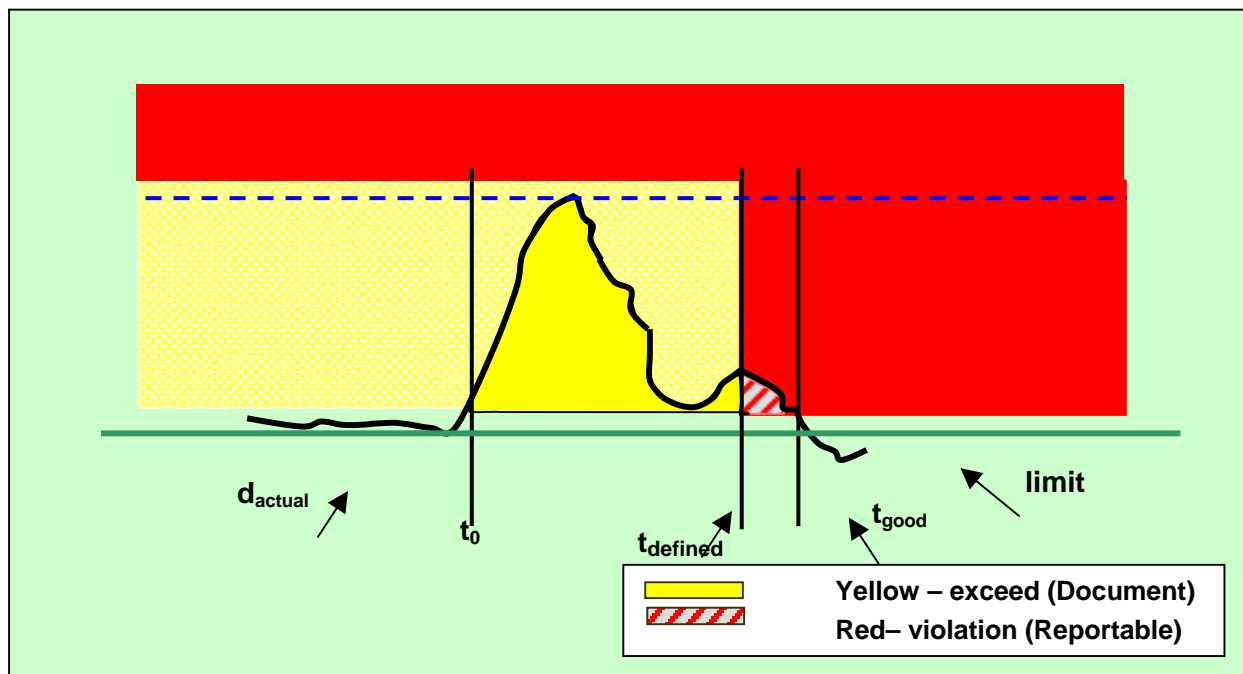
**Yes**

**No**

**Comments:** This is an area of concern for many. In the past there was an IEEE standard interchange format to share power flow data. Recently there have been numerous upgrades in

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power flow modeling programs and their associated data structures. Unfortunately the IEEE standard format has not kept pace. At the other extreme are program developers that insist on changing data structures on nearly a regular basis to provide program "enhancements". This creates conversion problems for those using older or different power flow programs. A standard data interchange data model needs to be developed to allow free interchanging of model data between different programs. The structure would only be changed though committee agreement. If this cannot be achieved, program developers should be required to provide data structure information and make it available to any party upon request. The data structure should also allow programs to be backward compatible. That is a newer program should always be able to read an older data format and perform satisfactorily.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

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**Yes**

**No**

**Comments:**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

Comments

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** At what point does telemetered data being unavailable constitute non-compliance (1 second, 1minute, 1 hour, etc.)?

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** At what point does telemetered data being unavailable constitute non-compliance (1 second, 1minute, 1 hour, etc.)?



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** The RA should utilize existing data models whenever available. Collection of data should be coordinated with other data model building efforts to minimize duplication of efforts.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

Comments:

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

Comments:

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**



**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Mike Miller
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Industry Segment #	1
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

X  **Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

X  **Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

X  **Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

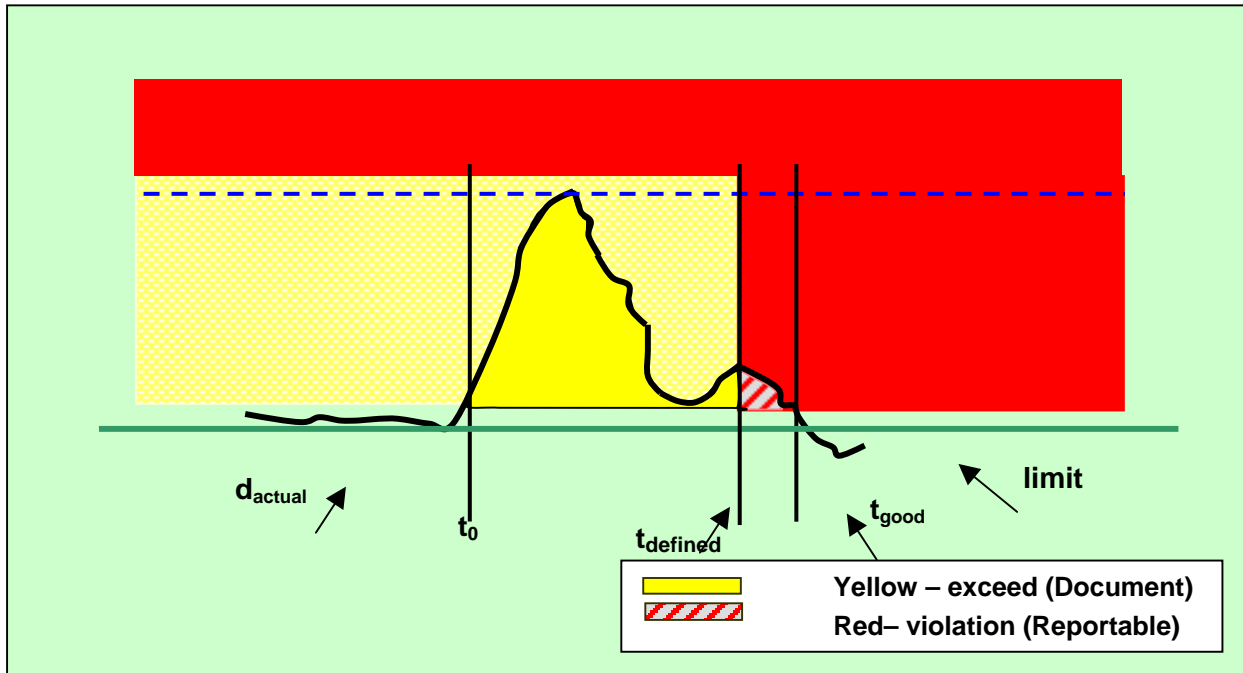
**Do you agree?**

X  **Yes**

**No**

**Comments:**

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments: Operating outside thermal, voltage, or stability criteria that is defined by OSL, but operating such that instability, uncontrolled separation, or cascading outages will not occur to more than localized area as a result of most severe contingency is a non-reportable OSLV.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

Non-Reportable Operating Security Limit Violation

Reportable Operating Security Limit Violation

**If possible, please provide us with a definition for each of these terms.**

- **NON-REPORTABLE OPERATING SECURITY LIMIT VIOLATION** - Operating outside the thermal, voltage, or stability criteria that defines the OPERATING SECURITY LIMIT, but operating so that instability, uncontrolled separation, or cascading outages will not occur to more than a localized area as a result of the most severe single contingency.
- **REPORTABLE OPERATING SECURITY LIMIT VIOLATION** - Operating outside the thermal, voltage, or stability criteria that defines the OPERATING SECURITY LIMIT, in a manner such that instability, uncontrolled separation, or cascading outages could occur to a widespread area as a result of the most severe single contingency.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** The operating limits should be associated with the ratings, or both should be defined for clarification.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Are Operating limits the same as ratings?

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** coordination should be required so that TOP or RA doesn't fall out of step

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses



**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Energization is testing or commercial date, needs definition.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Define energization

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Documentation included for Non-reportable as well as Reportable OSLV required

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** Previous comments

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Kathleen M. Goodman
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** Need to further define what real data means.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:** This definition is too vague. Please elaborate to ensure that compliance is achieved. Please give specific examples

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** Why is it necessary to make sure that updates are provided for? The RA/TOP certification process should be enough to ensure that the entity is performing the functions including updates. To add this requirement adds a layer of compliance which is redundant and not required.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

**Do you agree?**

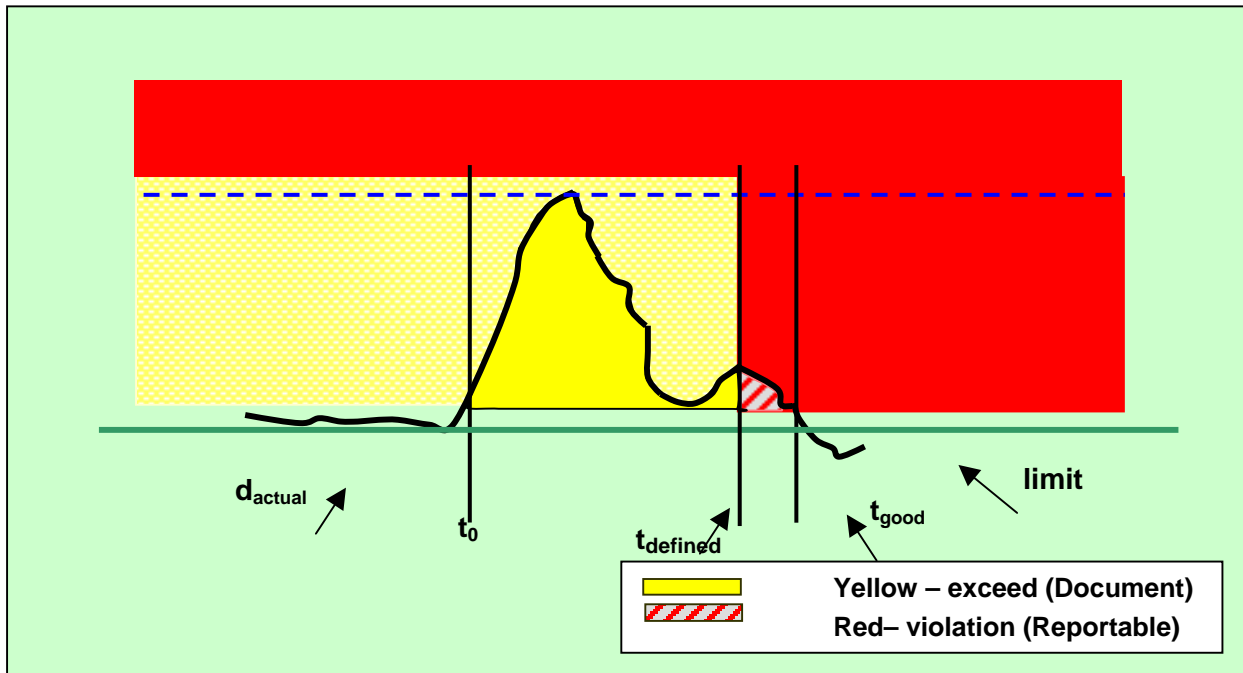
**Yes**



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No

**Comments:** Each RA/TOP should use whatever format that is acceptable to its constituencies.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:**

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Generator Owner**

"real" data

real-time

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments**

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*Please use Version A of the draft standard to answer these questions.*

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact outside of the New England Area following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC within 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggests this approach be adopted.

By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.

We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation if it cleared in less than 30 minutes.

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**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** This non-compliance matrix is completely inappropriate and ineffective. What is the scope of the telemetering unavailability required to achieve these levels of non-compliance? Is the goal here to achieve compliance with reliability standards or measure the amount of redundant telemetering equipment? It is clearly possible to maintain reliability absent some telemetering as long as an effective State Estimator is in use. Additionally, how much telemetering must be unavailable in order to be non-compliant: One point, five points, 5,000 points, etc.? Compliance should be measured against how many violations that an area had which were not cleared over a specified period of time. Only the RA should make the determination of how much telemetering is enough to have effective limit management.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** This standard should recognize that the RA, CA and TOP functions may all be performed at one location with primary responsibility enforced at the RA.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** This non-compliance matrix is completely inappropriate and ineffective. What is the scope of the telemetering unavailability required to achieve these levels of non-compliance? Is the goal here to achieve compliance with reliability standards or measure the amount of redundant telemetering equipment? It is clearly possible to maintain reliability absent some telemetering as long as an effective State Estimator is in use. Additionally, how much telemetering must be unavailable in order to be non-compliant: One point, five points, 5,000 points, etc.? Compliance should be measured against how many violations that an area had which were not cleared over a specified period of time. Only the RA should make the determination of how much telemetering is enough to have effective limit management.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** In general we agree with the requirement. However, it is up to the RA when and how the data will be collected and determined to be reliable. The primary issue we have with this requirement is the need to maintain a record of requested data and an identification of data not delivered.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**No**

**Comments:** See above.

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:** Same comments as 14 and 15

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Same comments as 14 and 15

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses



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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The term Generator Owner has not been defined anywhere. There may be cases where, depending upon the Agreements in-place, that the actual owner of a generator is not responsible for providing anything but, rather, a third party performs this function on their behalf.

Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** This needs clarification. Who is requesting that these programs be run? What type of programs? If there is no request, and nothing is done to study a potential reliability problem, is there non-compliance?

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** From the information the writer has provided we would suggest that the level of non compliance be based on findings that the system was found to be in an operating state that could have resulted in "instability, uncontrolled separation etc" due to the fact that an effective reliability analysis was not done, that would have identified the condition.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** This needs clarification. Who is requesting that these programs be run? What type of programs? If there is no request, and nothing is done to study a potential reliability problem, is there non-compliance?

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** From the information the writer has provided we would suggest that the level of non compliance should be based on findings that the system was found to be in an operating state that could have resulted in "instability, uncontrolled separation etc" due to the fact that an effective reliability analysis was not done, that would have identified the condition.

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### **Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **32. Do you agree with this requirement?**

Yes

No

**Comments:** Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels two and three appear to be identical.



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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels two and three appear to be identical.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC with 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.

By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.

We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation regardless of the time in which this was cleared.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete

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- 2. Not Applicable
- 3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
- 4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC with 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.

By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** In the current format of the existing draft SARs, it appears as though two very fundamental reliability requirements may be lost: (1) a Reserve Requirement; and (2) a CPS2-like requirement (a standard which accounts for ACE variations in addition to frequency control).

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Additional comments: ISO New England, nor NPCC members, subscribe to the use of monetary penalties to enforce compliance and we (ISO New England) in no way are a party to any contracts which allows NERC to do so.

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**STD Commenter Information (For Individual Commenters)**

Name Kim Warren (Roger Farrugia, Pete Henderson)

Organization IMO

Industry Segment # 2

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E-mail kim.warren@theimo.com

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



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**STD Commenter Information (For Groups Submitting Group Comments)**

Name of Group:

Group Chair:

Chair Phone:

Chair Email:

**List of Group Participants that Support These Comments:**

Name	Company	Industry Segment #

**1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

Comments:

**2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

Do you agree?

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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

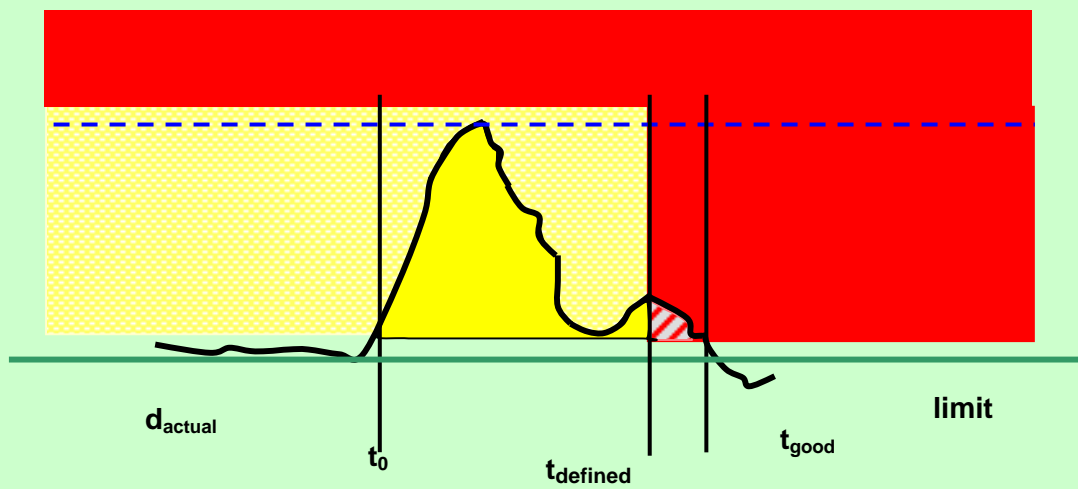
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

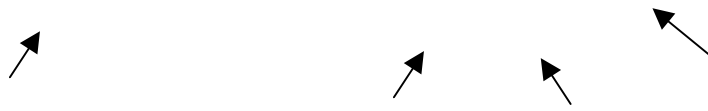
No

Comments:



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Local Areas**

**Reliability Authority Area**

**Wide Area**

**If possible, please provide us with a definition for each of these terms.**

Clearly differentiate between electrical areas that can cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and those areas that don't (Local Areas).

Reliability Authority Area consists of one or more Control Areas for which a single Reliability Authority is responsible.

A Wide Area impact is one that goes beyond the Reliability Authority Area.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Loss of a few telemetered quantities does not constitute an inability of the RA to perform his "monitoring "(and analysis) functions if the State Estimator remains functional. (In fact State estimated quantities are deemed to be often more accurate than telemetered quantities .) Reporting of loss of actual telemetry should only be required when the RA can no longer perform these functions. Furthermore, reporting each actual telemetry loss will create too much overhead for the RA, the Regions and/or NERC.

For a loss of the RA's "monitoring function", a minimum time standard should be built into this compliance issue similar to "Exceeding an Operating Limit but Not a Reportable Violation" (question 5 & 6). There should be a time allowance for short term failures (i.e. < 30 minutes) of failure before reporting is required.

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### Requirement 2:

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 12. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** Yes ,only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles(eg. switching,maintenance,outage & construction notification) that the Functional Model defines for the TOP.

Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 13. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Loss of a few telemetered quantities does not constitute an inability of the TOP to perform his "monitoring "(and analysis) functions if the State Estimator remains functional. (In fact State estimated quantities are deemed to be often more accurate than telemetered quantities .) Reporting of loss of actual telemetry should only be required when the TOP can no longer perform these functions. Furthermore, reporting each actual telemetry loss will create too much overhead for the TOP, the Regions and/or NERC.

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For a loss of the TOPs "monitoring function", a minimum time standard should be built into this compliance issue similar to "Exceeding an Operating Limit but Not a Reportable Violation" (question 5 & 6). There should be a time allowance for short term failures (i.e. < 30 minutes) of failure before reporting is required.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses



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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** The data needs to be defined before we can say yes. It could well be that the requested data is not readily available in the EMS or telemetered and may take much longer and could be costly if the providing RA did not feel it was important for his own purposes.

See also comments in questions 20, 22, 24 and 26. To meet this requirement the RA needs the data sooner (say in 10 days).

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The data needs to be defined before we can say yes. It could well be that the requested data is not readily available in the EMS or telemetered and may take much longer and could be costly if the providing RA did not feel it was important for his own purposes.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement "5" states that the RA has to notify other associated RA's and TOP's no less than 7 days prior to energization of new/changed facilities. If the Balancing Authority has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA's and TOP's. Therefore I suggest increasing the Transmission Operating Authority time line to 10 days.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement "5" states that the RA has to notify other associated RA's and TOP's no less than 7 days prior to energization of new/changed facilities. If the Interchange Authority has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA's and TOP's. Therefore I suggest increasing the Interchange Authority time line to 10 days.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement "5" states that the RA has to notify other associated RA's and TOP's no less than 7 days prior to energization of new/changed facilities. If the Transmission Owner has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA's and TOP's. Therefore I suggest increasing the Transmission Owners time line to 10 days.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement "5" states that the RA has to notify other associated RA's and TOP's no less than 7 days prior to energization of new/changed facilities. If the Generator Owner has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA's and TOP's. Therefore I suggest increasing the Generator Owners time line to 10 days.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** A minimum time standard should be built into this compliance issue similar to "Exceeding an Operating Limit but Not a Reportable Violation" (question 5 & 6). There should be a time allowance for short term failures (i.e. < 30 minutes) of the run of reliability analysis programs, under normal system conditions, before reporting is required.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Yes ,only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles(eg. switching,maintenance,outage & construction notification) that the Functional Model defines for the TOP.

Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** A minimum time standard should be built into this compliance issue similar to "Exceeding an Operating Limit but Not a Reportable Violation" (question 5 & 6). There should be a time allowance for short term failures (i.e. < 30 minutes) of the run of reliability analysis programs, under normal system conditions, before reporting is required.



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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** A more descriptive or clearer definition is required to differentiate between level 2 and level 3.

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** Yes ,only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles(eg. switching,maintenance,outage & construction notification) that the Functional Model defines for the TOP.

Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** A more descriptive or clearer definition is required to differentiate between level 2 and level 3.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Yes ,only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles(eg. switching,maintenance,outage & construction notification) that the Functional Model defines for the TOP.

Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** Clarify the distinction between "document" and "log". I would think that logging is sufficient.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** Is logging not sufficient? Whats the distinction between "document" & "log"?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:** Understanding that different companies have different operational setups and duties/requirements can sometimes cross boundry lines between different authorities (i.e. RA/TOP/TOW). In some case the RA and the TOP perform the same functions as defined in this SAR but that entity may not perform other duties such as switching, maintenance or notification of outages or construction plans which are also described as roles that the TOP is accountable for in the Functional Model.

In other case, some duties as defined in the SAR process may be duplicated or shared or the accountabilites for which limits may need to be clarified.

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:** Local Areas

**If yes, please identify what you feel should be added.**

**Clearly differentiate between electrical areas that can cause instability, uncontrolled seperation or cascading outages that advesely impact the reliability of the bulk transmission system and those areas that don't (Local Areas).**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** I prefer that the Standard have all RA requirements/information together. Same for TOP's, TOW's, BA's, IA's and Generator Owners. In other words a different section of the standard for each of the different authorities/owners where all their requirements are stated in one place.

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**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**



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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	
Organization	
Industry Segment #	
Telephone	
E-mail	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group: <i>Southern Company Generation &amp; Energy Marketing</i></b>		<b>Group Chair: Roman Carter</b>
		<b>Chair Phone: 205.257.6027</b>
		<b>Chair Email: jrcarter@southernco.com</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Roman Carter</i>	<i>SCGEM</i>	<i>3,5,6</i>
<i>Joel Dison</i>	<i>SCGEM</i>	<i>3,5,6</i>
<i>Tony Reed</i>	<i>SCGEM</i>	<i>3,5,6</i>
<i>Lucius Burris</i>	<i>SCGEM</i>	<i>3,5,6</i>
<i>Jeff Weathers</i>	<i>SCGEM</i>	<i>3,5,6</i>
<i>Clifford Shepard</i>	<i>SCGEM</i>	<i>3,5,6</i>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** It is recommended that “data” mean something specific vs. a “very general” reference to items. Being more specific would provide for us to give a more definitive answer on whether we agree or not.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

Yes

No

**Comments:** See answer to question #1.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** See answer to question #1.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

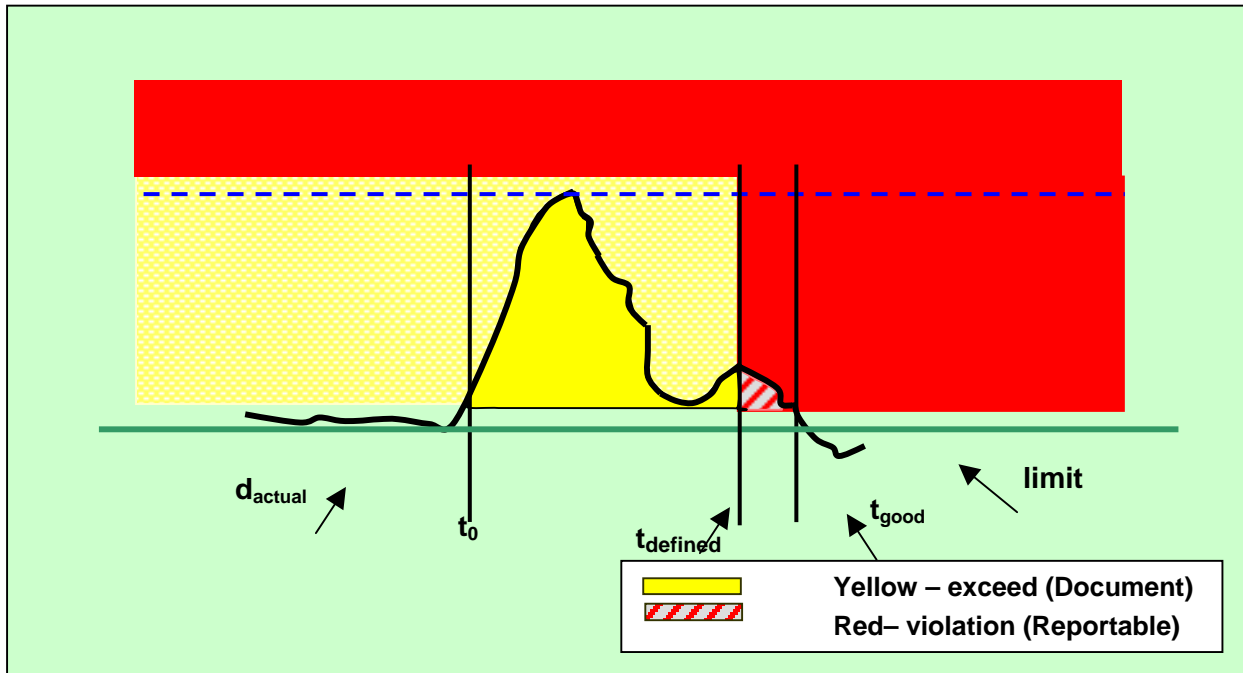
**Do you agree?**

Yes

No

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**Comments:** See answer to question #1.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:**

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**BA**

**TOP**

**Generator**

**Planning Authority**

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**RA**

**BA**

**Generator**

**Planning Authority**

**Comments**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Levels of non-compliance should not be determined by the availability of data. It should be based more on the RA's capability to monitor System Operating Limits and whether they took appropriate action to resolve issues preventing the RA from doing the monitoring.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** See answer to question # 11.

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### **Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### **Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### **14. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### **15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Is there a standard or requirement for the TOP, BA, or IA to provide this data to

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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the RA so that the RA is not captive. There needs to be some compliance requirement on those entities to provide the data (Maybe a criteria requirement in the certification SARs).



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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **16. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### **17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** However, my comments to question #15 applies here also.

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** A 7 day lead time is not adequate. It would be better for coordination to require no less than 1 month lead time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** More lead time should be required such as 1 month.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** More time such as 1 month should be considered.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Again, more time such as 1 month is more appropriate.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** More time such as 1 month is more appropriate.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** Agree with the requirement, but there is insufficient information on the analysis and how often it would be performed.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We agree with the form of non-compliance but without complete knowledge of how often the studies will be performed, we're not sure that the timeframes are adequate or not.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** However we have the same comments as in question #28.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We have the same comments as in question #29



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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** However, is there a coordinated effort between the RA and TOP to mitigate an OSL? Or, do the RA and TOP perform the mitigation plan completely independent of one another.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

Yes

No

**Comments:** Are there current reports available to better identify what the cause was for exceeding the security limit and would this report be available within 72 hours to meet the documentation requirement above. If not, maybe the timeframe should be changed.

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** Are there current reports available to better identify what the cause was for exceeding the security limit and would this report be available within 72 hours to meet the documentation requirement above? If not, maybe the timeframe should be changed.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	
Name	James Stanton
Organization	Calpine
Industry Segment #	5
Telephone	713-830-8694
E-mail	jstanton@calpine.com

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

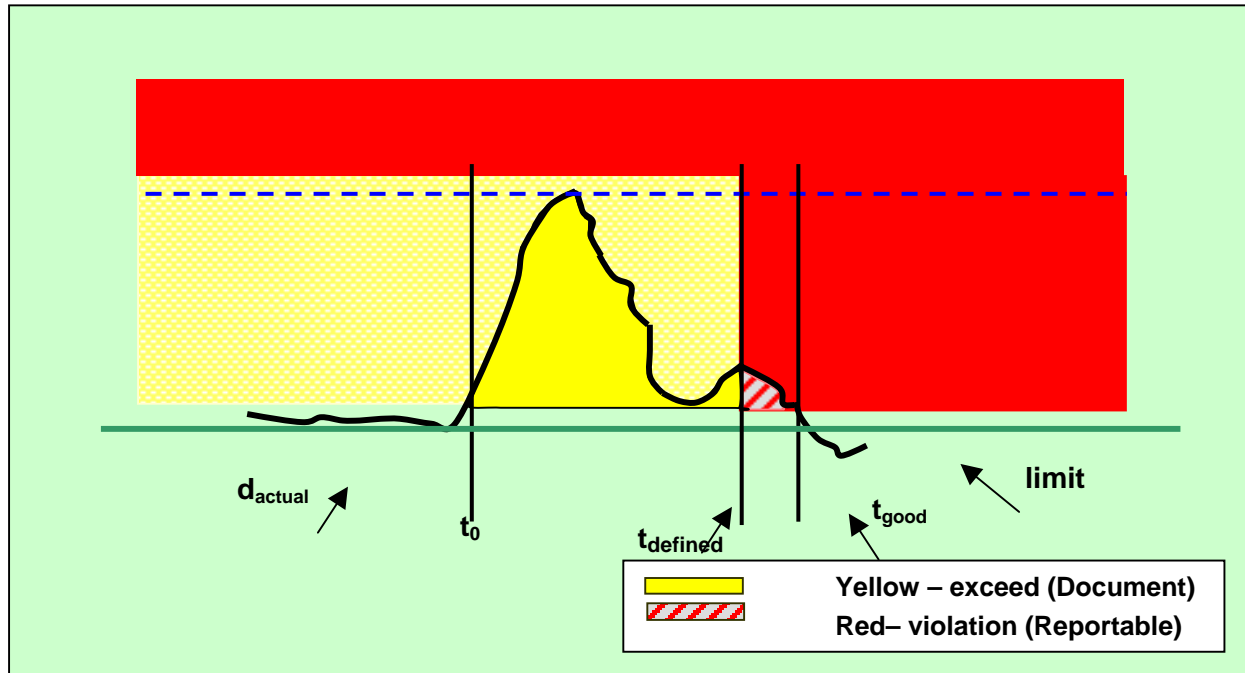
**Do you agree?**

**Yes**

**No**

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

Comments

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

- Yes  
 No

**Comments:** The TOP should collect generator data from the RA.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** What kinds of "changes" to facilities are we talking about? If this is defined somewhere else it should be included here. If it is not defined, it should be.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** Would like to see language in the Measure to the effect this documentation of actions taken will be readily available to all participants. This would help insure that potential discriminatory actions do not occur, and if they do, will be discoverable. If it is not readily available then the RA is non-compliant. The Measure and Non-compliance levels should also contain a time period when the documentation will be available.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** The Requirement sentence seems to be poorly constructed. Suggest this alternative: "The Reliability Authority (RA) shall have a mitigation plan that includes procedures designed to prevent operating limits from being exceeded, and to mitigate the effects of periods when the limits are exceeded."

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** See #37 language.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:** Suggest changing "instances of exceeding identified system operating limits" to "instances of identified system operating limits being exceeded" Also, in the Measures #1, "Data exists and is retrievable" retrievable by whom? Should be all interested parties.

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Alan Boesch
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Industry Segment #	1
Telephone	402-845-5210
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
Name	Company	Industry Segment #

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** This is not included in the scope of the RA certification functions. The RA certification function will verify if the processes and procedures are in place to perform the analysis. The certification SAR drafting team will depend the standards to assure that the appropriate data is available.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

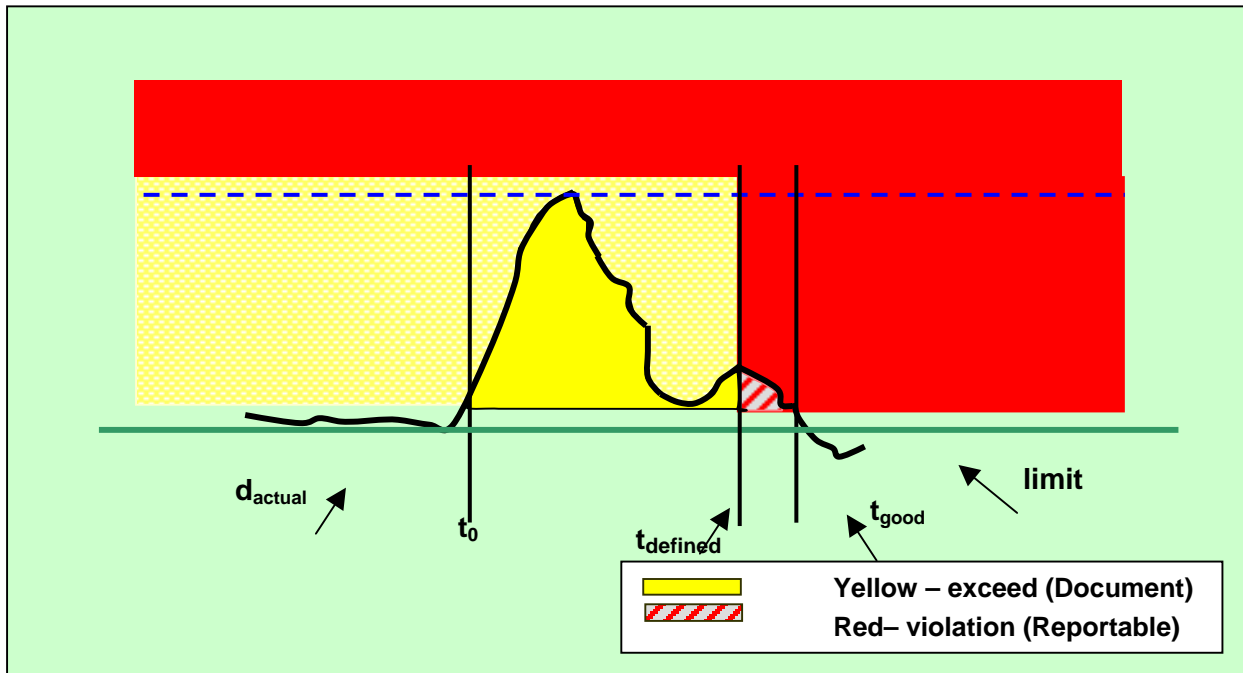
**Do you agree?**

**Yes**

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No

Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:



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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

"Actual data" and "Actual telemetered data"

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments The Generator should be responsible for getting the data to the RA. How it is accomplished should not be an issue. I would guess that in most situations it will be supplied by Planning.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments The Generator should be responsible for getting the data to the RA. How it is accomplished should not be an issue. I would guess that in most situations it will be supplied by Planning.

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:** I am very confused by this Standard. Who is going perform these functions the TOP or the RA. The Standard appears to have both performing the same function. The Standard needs to define the relationship between the RA and TOP. Maybe that could be accomplished in a opening paragraph. The requirements on the limits may be too broad. For example, an operating limit should also protect the safety of the public. If a facility was loaded to the point where it no longer met clearance requirements, the RA should respect these limits. The standards also seem to ignore voltage limits. There are limits to how high or low the voltage should be allowed to go before action is required. In addition to steady-state voltages, there should be a limit on transient voltages as well. It is not clear from this standard that these limits apply.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** I am assuming that the RA will not get the data directly but will receive the data from another source. It does not seem appropriate to sanction them for something they do not control. Maybe the non-compliance should be associated with the equipment the RA uses for monitoring the system. In addition the levels of non-compliance use the term "Actual telemetered data" while the footnote to the measures states that real-time, state estimated or calculated data is acceptable. There is at a minimum confusion with the way these terms are stated if not outright

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conflict. The standard needs to be consistent between the measurement and level of non-compliance.

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### Requirement 2:

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 12. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** I am very confused by this Standard. Who is going perform these functions the TOP or the RA. The Standard appears to have both performing the same function. The Standard needs to define the relationship between the RA and TOP. Maybe that could be accomplished in a opening paragraph. The requirements on the limits may be too broad. For example, an operating limit should also protect the safety of the public. If a facility was loaded to the point where it no longer met clearance requirements, the RA should respect these limits. The standards also seem to ignore voltage limits. There are limits to how high or low the voltage should be allowed to go before action is required. In addition to steady-state voltages, there should be a limit on transient voltages as well. It is not clear from this standard that these limits apply.

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 13. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** The levels of non-compliance use the term "Actual telemetered data" while the footnote to the measures states that real-time, state estimated or calculated data is acceptable. There is at a minimum confusion with the way these terms are stated if not outright conflict. The standard needs to be consistent between the measurement and level of non-compliance.

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** The standard should state what type of information may be required by the RA. A list similar to that in NERC Operating Policy 4 should be included and the RA could identify what data from this list is required. In addition the RA must make the request with sufficient time for the BA, IA, TOP or other RA to implement the data request.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**No**

**Comments:** There is no compliance measure to track the RA's reporting data that was requested but not received.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** The standard should state what type of information may be required by the TOP. A list similar to that in NERC Operating Policy 4 should be included and the TOP could identify what data from this list is required. In addition the TOP must make the request with sufficient time for the BA, IA, other TOP or RA to implement the data request.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** There is no compliance measure to track the TOP's reporting data that was requested but not received.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days prior to energization may be an unrealistic expectation. What type of data will the RA be providing to another RA or TOP on new or modified facilities? Will the data originate with the RA? If not the standard should be that the RA pass the data on within a specified period of time, but the requirement to provide the data belongs to the entity that owns the facility. Depending on the type of data you are talking about 7 days might be realistic.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The level of non-compliance does not seem appropriate. Start at level one and then escalate up through the the different levels depending on how late it is seems to be more appropriate.



**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days prior to energization may be an unrealistic expectation. What type of data will the BA be providing to an associated RA or TOP on new or modified facilities? Will the data originate with the BA? If not the standard should be that the BA pass the data on within a specified period of time, but the requirement to provide the data belongs to the entity that owns the facility. Depending on the type of data you are talking about 7 days might be realistic.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The level of non-compliance does not seem appropriate. Starting at level one and then escalate up through the the different levels depending on how late it is seems to be more appropriate.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days prior to energization may be an unrealistic expectation. What type of data will the IA be providing to an associated RA or TOP on new or modified facilities? Will the data originate with the IA? If not the standard should be that the IA pass the data on within a specified period of time, but the requirement to provide the data belongs to the entity that owns the facility. Depending on the type of data you are talking about 7 days might be realistic.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The level of non-compliance does not seem appropriate. Starting at level one and then escalate up through the the different levels depending on how late it is seems to be more appropriate.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Depending on the type of data seven days prior to energization may be a unrealistic expectation.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The level of non-compliance does not seem appropriate. Starting at level one and then escalate up through the the different levels depending on how late it is seems to be more appropriate.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Depending on the type of data seven days prior to energization may be a unrealistic expectation.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The level of non-compliance does not seem appropriate. Starting at level one and then escalate up through the the different levels depending on how late it is seems to be more appropriate.

## STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### **Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### **Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **28. Do you agree with this requirement?**

Yes

No

**Comments:** The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation or cascading outages. See comments to question no. 10 above.

### **Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

### **29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Is there a difference between "run" and converge? A program can run but not produce useful results. It also seems there should be some period of time to permit the solution to converge prior to being out of compliance. It is not realistic to get convergence 100% of the time on real-time programs.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation ore cascading outages. See comments to question no. 10 above.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Is there a difference between "run" and converge? A program can run but not produce useful results. It also seems there should be some period of time to permit the solution to converge prior to being out of compliance. It is not realistic to get convergence 100% of the time on real-time programs

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation or cascading outages. See comments to question no. 10 above.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** What is the difference between two and three? If it is the difference between documenting and reporting a violation (the amount of time over the limit), this needs to be clarified in the standard. The items in No. 4 need to be expanded based on comments to question No. 10.

## STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation or cascading outages. See comments to question no. 10 above.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** What is the difference between two and three? If it is the difference between documenting and reporting a violation (the amount of time over the limit), this needs to be clarified in the standard. The items in No. 4 need to be expanded based on comments to question No. 10.



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### **Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

### **Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

### **Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **36. Do you agree with this requirement?**

Yes

No

**Comments:** Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.

### **Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

### **37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

Yes

No

**Comments:** What is the "specified period of time"? Will this period be defined in this standard? What is the importance of getting this information to the Compliance Monitor in 72 hours? What will the compliance monitor do with the report? What is the basis for having the data available for three years?

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Why is the timing of the report so important?

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** The Standard does not require the RA or TOP to provide evidence that they have the authority to take necessary actions. This requirement is currently included in the Certification SARs.

**If yes, please identify what you feel should be added.**

**This Standard should reference the Certification Standard and any other applicable Standards.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** Version A is very clear and easy to understand the Requirement, Measurement, Outcomes,etc for the particular requirement.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Version A is very clear easy to follow. Version B is harder to follow and relate the Measurement, Outcomes,etc for the particular requirement. This is reflected in this response form because it requests that Version A be used to provide the response. Please note that version B has two 201 (f) sections and no 202 (f) section.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

**STD Commenter Information (For Individual Commenters)**

Name Karl Kohlrus  
 Organization City Water, Light & Power  
 Industry Segment # 5  
 Telephone 217-321-1391  
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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
 Regulatory or other Govt. Entities

**STD Commenter Information (For Groups Submitting Group Comments)**

<b>Name of Group:</b>	<b>Group Chair:</b>
	<b>Chair Phone:</b>
	<b>Chair Email:</b>

**List of Group Participants that Support These Comments:**

<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

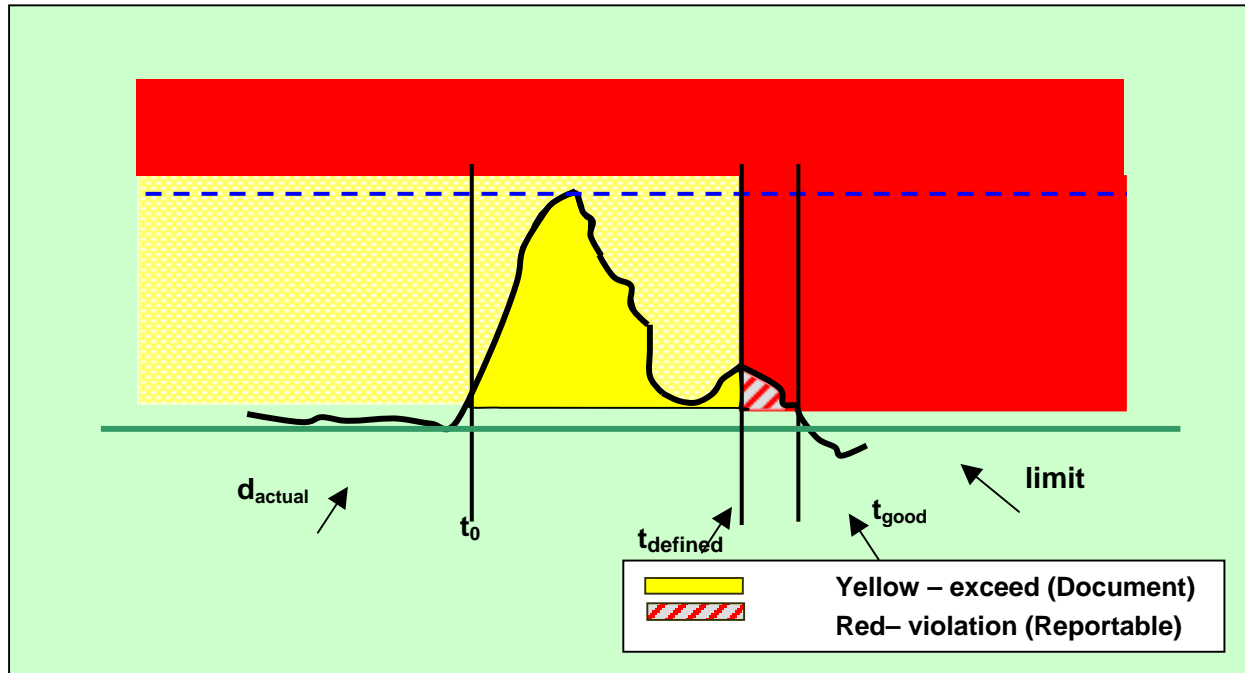
**Do you agree?**

**Yes**

**No**

**Comments:**

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

- Yes
- No

**Comments:** To me the graph is unclear. For someone who has not seen this graph before, it is not obvious what it is trying to show. That is, are the bad areas along the x or y axis? It would be better to have a graph with three regions: the allowable (green) region within a deadband, a yellow region that may need documentation, and a red region that is a reportable violation. For example, if a quantity has a deadband of -100 to +100, a yellow range may go from -110 to -100 and from +100 to +110, while the red range may be anything less than -110 and greater than +110.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

- Yes
- No

**Comments:**



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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be a reminder sent out if the data is not sent initially before going directly to Level 4.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be a reminder sent out if the data is not sent initially before going directly to Level 4.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be a reminder sent out if the data is not sent initially before going directly to Level 4.



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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be a reminder sent out if the data is not sent initially before going directly to Level 4.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be a reminder sent out if the data is not sent initially before going directly to Level 4.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be a reminder sent out if the data is not sent initially before going directly to Level 4.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** The organization of the document makes it very difficult to read. Much of the data is similar and repetitive. Maybe the document should be organized differently, either separate standards applicable to RA only, the IA only, the BA only, and the TOP only. Then each entity would have to read and comply only with the standard that is applicable to him. An alternative method would be to state in each section that this is applicable to RA, IA, BA or TOP.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**STD Commenter Information (For Individual Commenters)**

Name	Roger Green
Organization	Organization Southern Company Services - SOCO Generation
Industry Segment #	5
Telephone	205-257-1903
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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b> <b>Chair Phone:</b> <b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?**

Yes  
 No

**Comments:**

**2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

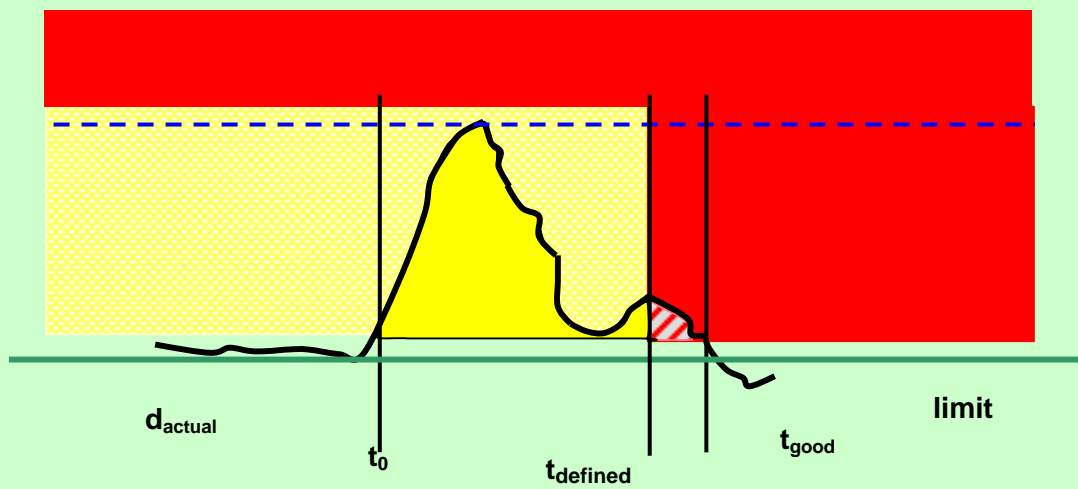
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

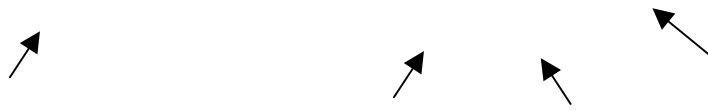
No

Comments:



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments Regardless of who receives and distributes the data, the generator owner should only have to provide the data to one group.**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments See comment on #8**



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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** This requirement is too subjective. The necessary actions are not identified to assess compliance. Some results, such as voltage outside a defined limit, should require notice to nuclear generators so that regulatory Technical Specification requirements for continued operation can be met. Otherwise, the units could either be forced offline or into limited operation. This standard should include the requirement that a written agreement be established between the RA, TOP and generators identifying the actions to be taken by mutual agreement. Reference IEEE Std 765-2002 Annex A for further details on this proposed change.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

---

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

---

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** #1. Cannot properly evaluate until data requirements are specified.  
#2. Is it practical for all parties to meet the 7 day data turn around requirements (see Requirements 5-9)? The common time frame indicates the data may have to be submitted by the facility owner to all parties.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** These are non traditional requirements on generation owners (maybe not on the type of data but on the group or groups in which the generator must coordinate).

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**



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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** The standard clearly identifies the obligation of generators to provide data to the RA's and TOP's stating in the background that there are various ways generators may be obligated to provide data. A requirement needs to be added addressing the obligation of the RA's and TOP's to likewise provide data to the generators. Additions, deletions, or other changes to the bulk transmission system can impact the accuracy of models used to monitor and assess the adequacy of generating plants, their protective schemes and their interconnections to the grid. An example is any system changes affecting system impedance or changes in transmission relay settings that require coordination with plant relays. One miscoordination between plant relays and transmission relays could result in the tripping of an entire four unit 4000MW plant which is not a contingency normally planned for. Another is any system impedance changes that can affect generator excitation system settings (MEL and URAL) which can result in reactive limits being reached and cascading unit trips.

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

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<b>STD Commenter Information (For Individual Commenters)</b>
Name
Organization
Industry Segment #
Telephone
E-mail

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>ECAR Operations Panel</i>		<b>Group Chair:</b> <i>Jim Cyrulewski</i>
		<b>Chair Phone:</b> 734-665-3628
		<b>Chair Email:</b> jcyrulewski@itctransco.com
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Dan Kinney</i>	<i>AEP</i>	<i>1</i>
<i>Ken Githens</i>	<i>Allegheny Energy Supply</i>	<i>5</i>
<i>Mark Klohonatz and Bill Smith</i>	<i>AP</i>	<i>1</i>
<i>Bob McClelland</i>	<i>DQ</i>	<i>1</i>
<i>Tom Kraynak</i>	<i>ECAR</i>	<i>2</i>
<i>Dave Folk and Ray Morella</i>	<i>FE</i>	<i>1</i>
<i>Lew Gray and Paul Fielden</i>	<i>IPL</i>	<i>1</i>
<i>Jim Cyrulewski</i>	<i>ITC</i>	<i>1</i>
<i>Joe Dobes</i>	<i>NIPSCO</i>	<i>1</i>
<i>Bill Squibb</i>	<i>OVEC</i>	<i>5</i>
<i>Gerry Mellingeri</i>	<i>PJM</i>	<i>1</i>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** 'data' should include real-time, state estimated, calculated or manually monitored values. It should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

Yes

No

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** (1) This assumption needs to be clearly stated at the front end of the standard. (2) The standard should define the data that needs to be provided similar to NERC Appendix 4B - Electric System Security Data.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

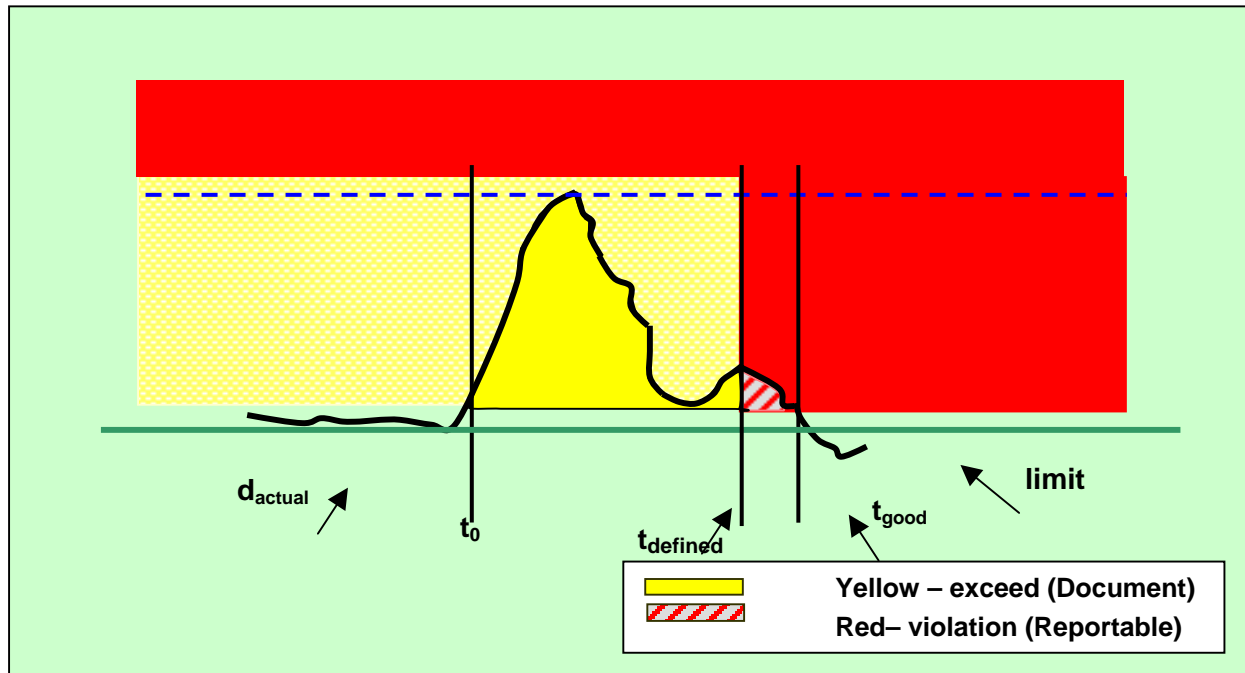
**Do you agree?**

Yes

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No

Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** First this graph is a great aid in understanding this standard. I really like it. The following suggestions are for making a good thing better. I voted yes because of my interpretation of the graph. I'm not sure my interpretation is completely correct. I recommend that the graph (and the description of the graph) also be done in various shades of grey because not everybody has a color printer and many operators would get a black and white copy of the graph. The pointers for Dactual, tgood, and limit should be closer to the curve or line that they represent. I don't know why there is a dotted blue line representing the max value of the monitored value; it doesn't seem to be used anywhere. I think it would be of value to state that a reportable violation does not exist until the Operating Security Limit has been consecutively violated for  $t_{defined}$ . I think it would be of value to state that the exceeding of the operating limit for any period of time must be documented. Under existing NERC Policy I assume that there would not be a reportable Operating Security Limit Violation if the Operating Security Limit were exceeded for 28 minutes, then it was not exceeded for 1 minute, then it was exceeded for another 28 minutes, then it was not exceeded for 1 minute and this pattern

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continued for the next 24 hours. I'm teasing a little here because you can't cover every circumstance in detail. In fact I do think that the above example would be a reportable Operating Security Limit Violation. If in the graph the monitored value dipped below the Operating Security Limit for an instance and then exceeded the limit for the rest of the period and that was still an Operating Security Limit Violation, another loophole will have been addressed.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

Yes

No

**Comments: I thought that there wasn't an Operating Security Limit Violation until an Operating Security Limit was exceeded for a period of time (tdefined). I wasn't aware of an Operating Security Limit Violation that occurred for an instantaneous exceeding of a limit. Maybe I don't fully understand the Standard. Need to better describe what is a violation versus what is a reportable violation. The concept of a violation in the red zone is confusing.**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**(1) Occurrence Period, (2) Operating Security Limit Violation, (3) Transmission Operator**

**If possible, please provide us with a definition for each of these terms.**

(1) Occurrence Period - I'm not sure what you mean when you refer to an Occurrence Period,  
(2) Operating Security Limit Violation - A limit that results in instability, uncontrolled separation, or cascading outages if exceeded for more than one hour. I believe this definition is appropriate for the existings NERC template on Operating Security Limit Violation.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments** The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the Reliability Coordinator (RC) should use data from the BA, the TOP, or the Planning Authority, if he can't get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the TOP. This should be allowed. As long as the data is accurately supplied, it doesn't matter who supplies it. I don't think the standard should be too prescriptive on who supplies the data.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments** The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the TOP should use data from the Reliability

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**Coordinator (RC), the BA, or the Planning Authority if he can't get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the RC. This should be allowed. As long as the data is accurately supplied I don't care who supplies it. I don't think the standard should be too proscriptive on who supplies the data.**



## STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** I agree with the intent of this requirement and associated performance/outcome but the written words need to be changed. (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. This concept also needs to be reflected in section 201 (e) Compliance Monitoring Process. (2) Delete the paranthetical phrases, (in real time) and (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system), in Requirement 1. We have already commented that it was allowable for monitoring to be done via voice communications from a manned substation which is not real time monitoring. The standard needs to add a more detailed definition of an Operating Security Limit. If this were done one of the paranthetical expressions would not be needed. The comments to Question 45 also apply to this question.

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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**Comments:** . (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Note 1 says - 'Real Time could be continuous analog data or data sampled at a rate greater than or equal to one minute -----'. One minute is a unit of time not a rate. I think it should say - 'Real time could be continuous analog data or data sampled faster than or equal to once a minute-----'. (4) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202 applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator. (5) The description of Level 1 Non-compliance and Level 2 Non-compliance under 'Levels of Non-compliance for this Requirement' should be changed. Level 1 non-compliance should read 'Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 24 hours'. Level 2 non-compliance should read 'Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 48 hours'. There is nothing wrong with using a manual reading phoned in from a substation or using a value calculated from surrounding parameters. A value calculated from surrounding parameters might be better than an incorrect telemetered value. Some State Estimation systems use a value calculated from surrounding parameters instead of the telemetered value for certain circumstances.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** I agree with the intent of this requirement and associated performance/outcome but the written words need to be changed. (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. This concept also needs to be reflected in section 202 (e) Compliance Monitoring Process. (2) Delete the paranthetical phrases, (in real time) and (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system), in Requirement 1. We have already commented that it was allowable for monitoring to be done via voice communications from a manned substation which is not real time monitoring. The standard needs to add a more detailed definition of an Operating Security Limit. If this were done one of the paranthetical expressions would not be needed. The comments to Question 45 also apply to this question.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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**Comments:** (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Note 1 says - 'Real Time could be continuous analog data or data sampled at a rate greater than or equal to one minute-----'. One minute is a unit of time not a rate. I think it should say - 'Real time could be continuous analog data or data sampled faster than or equal to once a minute----'. (4) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202 applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator. (5) The description of Level 1 Non-compliance and Level 2 Non-compliance under 'Levels of Non-compliance for this Requirement' should be changed. Level 1 non-compliance should read 'Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 24 hours'. Level 2 non-compliance should read 'Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 48 hours'. There is nothing wrong with using a manual reading phoned in from a substation or using a value calculated from surrounding parameters. A value calculated from surrounding parameters might be better than an incorrect telemetered value. Some State Estimation systems use a value calculated from surrounding parameters instead of the telemetered value for certain circumstances.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** I recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. I would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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Yes

No

**Comments:** . Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** I recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. I would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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Yes

No

**Comments:** Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from (providing specified data no less than 7 days prior to the energization of new facilities) to (providing specified data prior to the energization of new facilities). I can just see someone delaying the installation of a needed facility for 7 days because they didn't want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment. (2) Change 'by an (associated) RA' to 'by another RA'. Less words, more descriptive. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from (providing specified data no less than 7 days prior to the energization of new facilities) to (providing specified data prior to the energization of new facilities). I can just see someone delaying the installation of a needed facility for 7 days because they didn't want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment. (2) I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the BA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes  
 No

**Comments:** (1) Change the Requirement from (providing specified data no less than 7 days prior to the energization of new facilities) to (providing specified data prior to the energization of new facilities). I can just see someone delaying the installation of a needed facility for 7 days because they didn't want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment. (2) I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the IA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

- Yes
- No

**Comments:** (1) Change the Requirement from (providing specified data no less than 7 days prior to the energization of new facilities) to (providing specified data prior to the energization of new facilities). I can just see someone delaying the installation of a needed facility for 7 days because they didn't want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment. (2) I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the TOP can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from (providing specified data no less than 7 days prior to the energization of new facilities) to (providing specified data prior to the energization of new facilities). I can just see someone delaying the installation of a needed facility for 7 days because they didn't want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment. (2) I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the Generation Owner can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'. What is the difference between accurate data and technically accurate date? Is technically accurate data better that accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** The Reliability Coordinator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.

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### Requirement 11:

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### Measure(s):

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### Outcome(s) (100% Compliance):

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 30. Do you agree with this requirement?

Yes

No

**Comments:** (1) Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator. (2) The Transmission Operator may not have the wide area data that is available to a Reliability Coordinator and may not have as extensive a model as the Reliability Coordinator. There may be differences between the reliability analysis done by the Transmission Operator and the Reliability Coordinator. There needs to be coordination between the Transmission Operator and Reliability Coordinator on these analysis.

### Levels of Non-compliance for this Requirement:

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

### 31. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** The Transmission Operator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don't think that the Reliability Coordinator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action. For instance, if the Reliability Coordinator ordered a

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Balancing Authority to drop load because of low or declining frequency and the Balancing Authority did not drop the load, then the level 4 non-compliance should be charged to the Balancing Authority not the Reliability Coordinator.



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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don't think that the Transmission Operator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action. For instance, if the Transmission Operator ordered a

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Balancing Authority to drop load because of low or declining frequency and the Balancing Authority did not drop the load, then the level 4 non-compliance should be charged to the Balancing Authority not the Transmission Operator.

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### **Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

### **Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

### **Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **36. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

### **Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

### **37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Version A and Version B of this questionnaire have different descriptions of non-compliance for this requirement. The standard needs to define which description is correct.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Version A and Version B of this questionnaire have different descriptions of non-compliance for this requirement. The standard needs to define which description is correct.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** (1) The existing NERC template on Operating Security Limits is confusing. This standard is much, much, much more confusing. There are many system operating limits. This standard does not say which system operating limit has to be reported and under what conditions it has to be reported. Do you have to report a system operating limit exceedance that has little impact on bulk power reliability. If so you'll get thousands of irrelevant reports every week for minor system operating limit exceedances. A report should be filed when a Operating Security Limit has been exceeded for 30 minutes per the existing NERC Policy. See the definition of an Operating Security Limit Violation under item 7 of this questionnaire. Requirement 216 has to be much more specific. If one cannot supply the specifics then this standard is not ready for balloting. (2) Requirements 216 and 217 are very similar. Requirement 216 applies to Reliability Coordinators. Requirement 217 applies to Transmission Operators. The requirements are duplicative. The standard should require the documenting of Operating Security Limit violations by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both documenting the violations if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator. (3) The standard needs to clarify the difference between a reportable incident and an incident that is not reportable but must be documented.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:

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- Logs were available but supporting documentation was unavailable
- Supporting documentation indicated unlogged violation
- An incident occurred and there was no report within 72 hours

4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** 1) The existing NERC template on Operating Security Limits is confusing. This standard is much, much, much more confusing. There are many system operating limits. This standard does not say which system operating limit has to be reported and under what conditions it has to be reported. Do you have to report a system operating limit exceedance that has little impact on bulk power reliability. If so you'll get thousands of irrelevant reports every week for minor system operating limit exceedances. A report should be filed when a Operating Security Limit has been exceeded for 30 minutes per the existing NERC Policy. See the definition of an Operating Security Limit Violation under item 7 of this questionnaire. Requirement 216 has to be much more specific. If one cannot supply the specifics then this standard is not ready for balloting. (2) Requirements 216 and 217 are very similar. Requirement 216 applies to Reliability Coordinators. Requirement 217 applies to Transmission Operators. The requirements are duplicative. The standard should require the documenting of Operating Security Limit violations by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both documenting the violations if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator. (3) The standard needs to clarify the difference between a reportable incident and an incident that is not reportable but must be documented.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** (1) Throughout the standard the term Reliability Authority is used. This term is out of date and has been replaced by Reliability Coordinator. Is the Reliability Authority in this questionnaire identical to the Reliability Coordinator function? This issue needs clarification. If the Reliability Authority in this questionnaire is different than the Reliability Coordinator function, there needs to be an explanation of the difference. (2) Throughout the standard the term 'system operating limit' is used. This term should be replaced with the term 'Operating Security Limit'. There are many different system operating limits. These standards do not apply to all of them. This standard only applies to Operating Security Limits violations. The term Operating Security Limit should be used and defined to distinguish it from the multitude of system operating limits that are routinely used in everyday operation.

**If yes, please identify what you feel should be added.**

**(1) Throughout the standard replace the term Reliability Authority with Reliability Coordinator.  
(2) Throughout the standard replace the term 'system operating limit' with Operating Security Limit. Write a definition of Operating Security Limit.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** It will be easier to modify the standards if each requirement is a stand alone item. There was not complete agreement on this item. Eight companies preferred Version A - Each Requirement Separate. Two companies preferred Version B - Related Requirements Combined.



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**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** (1) The application of the Sanctions table is difficult to understand. A few examples on how to apply sanctions would be helpful. (2) Add descriptive titles to the subsections.

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<b>STD Commenter Information (For Individual Commenters)</b>
Name
Organization
Industry Segment #
Telephone
E-mail

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>NERC Operating Limit Definition Task Force</i>		<b>Group Chair:</b> <i>Wayne VanOsdol</i> <b>Chair Phone:</b> (651) 632-8413 <b>Chair Email:</b> wvanosdol@midwestiso.org
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>H. Steven Myers</i>	<i>ERCOT</i>	<i>ISO/RTO/CA</i>
<i>Al Miller</i>	<i>The IMO</i>	<i>ISO/RTO/CA</i>
<i>Lynna Estep</i>	<i>SERC</i>	<i>RRC</i>
<i>Bob Reed</i>	<i>PJM</i>	<i>ISO/RTO/CA</i>
<i>Jim Hartwell</i>	<i>NPCC</i>	<i>RRC</i>
<i>Ed Pfeiffer</i>	<i>Ameren</i>	<i>Trans Owner/Gen</i>
<i>Fran Halpin</i>	<i>BPA</i>	<i>Trans Owner/Gen</i>
<i>Wayne VanOsdol</i>	<i>MISO</i>	<i>ISO/RTO</i>
<i>Bob Dintelman</i>	<i>WECC</i>	<i>RRC</i>
<i>Ray Palmieri</i>	<i>ECAR</i>	<i>RRC</i>
<i>David Hilt</i>	<i>NERC</i>	<i>n/a</i>
<i>Don Benjamin</i>	<i>NERC</i>	<i>n/a</i>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

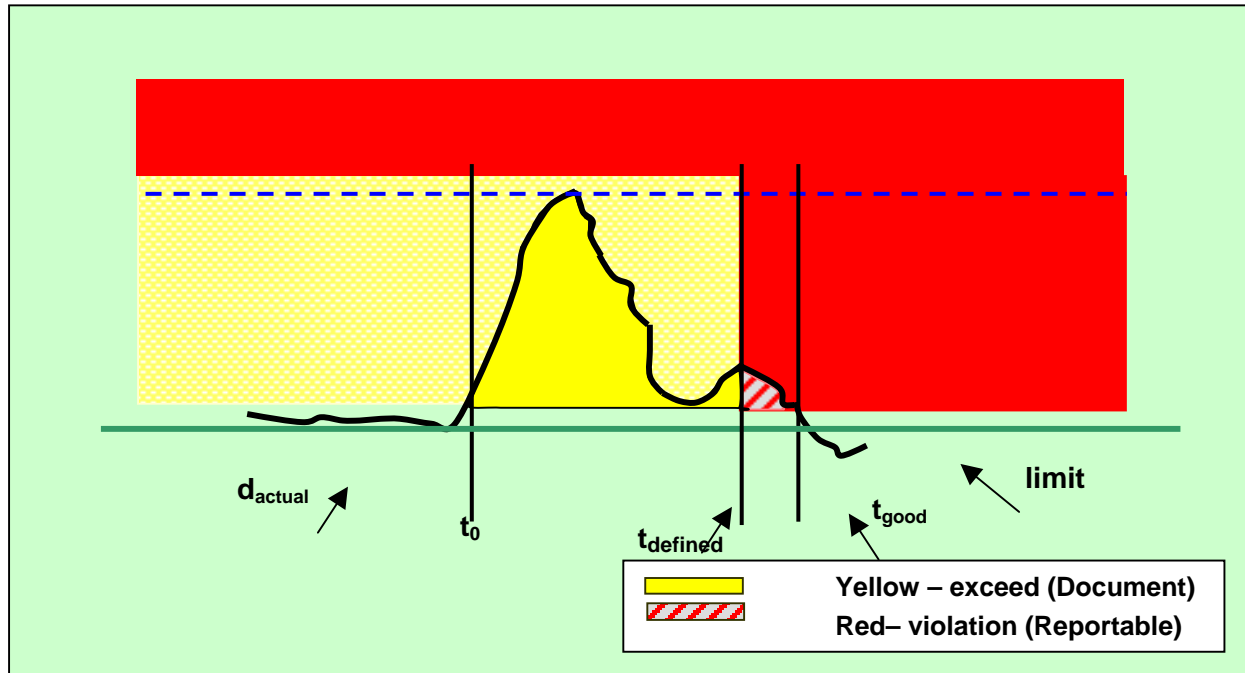
**Do you agree?**

**Yes**

**No**

**Comments:**

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

- Yes
- No

**Comments:** Please refer to the Operating Limits Definition Task Force report, "NERC Operating Limit Definitions and Reporting." The Task Force considers this report to be an integral part of its comments to Standard Drafting Team.

The OLDTF has defined "Limit Compliance Violation" for reporting IRL violations to the Regional Council and NERC.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

- Yes
- No

**Comments:** See comment to Q5 above.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Instability**

**Uncontrolled Separation**

**Cascading Outages**

**Widespread Area**

**Local Area**

**If possible, please provide us with a definition for each of these terms.**

The OLDTF has defined these terms in its attached report.

The OC has directed the Reliability Coordinators to use these definitions as a "field test" this summer, and to work with the Standard Drafting Team to incorporate these definitions into the Reliability Standard.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**BA**

**TOP**

**Generator**

**Planning Authority**

**Comments At least in ERCOT, the T. Op does not receive all of the generator data; some is provided to the T. Op in an Interconnection Agreement, but more is required to be provided to the ERCOT in its role as the RA.**

**The BA may well provide the data if the generators are under a contractual obligation to do so with the BA.**

**The Generator Owner and Transmission Owner provides data for their facilities.**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**RA**

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BA

Generator

Planning Authority

Comments ERCOT performs these analysis as the RA, BA, and Planning Authority.

Not certain why the T. Op performs system analyses. That's the RA's function. The RA may or may not accept the T. Op's analysis.

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Please refer to the OLDTF report. The RA must ensure that the SOLs and IRLs are established.

The Measures don't relate to the Requirement. The requirement is that the RA "shall monitor" not that "the limits be available" or "data is available." Those measures should pertain to the function(s) responsible for providing the limits and ratings, such as the Generator Owner or Transmission Owner.

The measure should be that the RA did indeed monitor the limits. What's unstated is over what time frame. Continuous monitoring? Hourly?

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please refer to our comments to Q10. The RA typically cannot control whether the data is provided, but may have acceptable and prudent measures in place to require the data.

This comment would apply through the document.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** Same comments as Q10. The Measures don't relate to the Requirement.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Same comment at Q11.

It appears to that there will likely have numerous Level 1 non-compliances unless a threshold is established. Anyone who has been a system operator knows that metering signals fall in and out. If level 1 indicates that every time you lose a signal for metering you are non-compliant, I think it needs reconsideration. The drafting team should consider that state estimators can supply some of this data in the short term.



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** The Requirement should be refocused to state that the RA needs to maintain accurate models and run studies to determine IRLs rather than directing the RA to collect the data it needs. There should be Requirements of the T. Owner, G. Owner, LSE, and T. Operator to provide the RA with the data it needs for its studies.

Under Requirements 6 and 7 minimum times are specified for provision of "monitoring" data provision. However no similar minimum time line is stated for this requirement. For consistency, a minimum time should also be stated. This time specification, should provide sufficient time for the RA etc to perform data base modelling and development and confirmation of limits.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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3. Not Applicable

4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Please see the first paragraph in our comment to Q14 above.

The RA typically has no control of whether the data is provided, but may have prudent and acceptable measures in place which require the data.

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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **16. Do you agree with this requirement?**

Yes

No

**Comments:** Same comment as Q 14, but with focus on T. Op. Also, the T. Op. does not need to collect any information from the IA. The IA has next-hour bilateral and market dispatch interchange information, but it's not of any use to the T. Op.

Under Requirements 6 and 7 minimum times are specified for provision of "monitoring" data provision. However no similar minimum time line is state for this requirement. For consistency, a minimum time should also be stated. This time specification, should provide sufficient time for the RA etc to perform data base modelling and development / confirmation of limits.

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Please see comment for Q 15.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes
- No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The timing of this requirement conflicts with Requirement 5. That is, the seven days does not leave the RA any time to complete its obligations under requirement 5.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** This Requirement makes no sense. The IA authorizes next-hour bilateral Transactions and Market dispatch that are ready for physical implementation.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** The timing of this requirement conflicts with Requirement 5. That is the seven days does not leave the RA any time to complete their obligations under requirement 5.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The timing of this requirement conflicts with Requirement 5. That is the seven days does not leave the RA any time to complete their obligations under requirement 5.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** Agree with the Requirement, but as the Outcome is written, assumes that all RAs have online reliability analysis programs to identify the applicable limits. In fact many use off-line studies to perform base case analysis which are translated into cyclic computer calculations.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Please refer to our response to Q28. Also, we would have treated this requirement as more important. Instead of skipping level 4, we would have used levels 2, 3, and 4 with the caveat of having appropriate predetermined analyses to take the place of real-time analyses.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** In the ERCOT Region, the primary responsibility for such analysis is ERCOT as the RA. This is in conjunction with any analysis the TOP performs, but the TOP does not have the primary responsibility. In other words, the RA is responsible for these analysis.

Also, please refer to our comments to Q28.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please refer to our comments to Q29.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** Agrees with OLDTF report.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level 2 and 3 appear to be the same.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement does not adequately address the coordination that must take place between the T. Op and the RA. Furthermore, the T. Op may not include a wide enough scope to determine these limits.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See response to Q 33. 2 and 3 appear to be the same.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Re Outcomes: We believe that this should read "procedure or policy" to ensure "Operating within limits and associated mitigating actions are taken." We don't know how you can have a "documented, approved mitigation plan" for unknown contingencies. Furthermore, Requirement 14 is awkward -- such a plan should be part of the Certification requirements, not this standard.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Same a response to Q36.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** First, we believe this applies to IRL Compliance Violations only. Also, should split into a Preliminary Report and a "complete" Report. Preliminary Report should be submitted within 72 hours. A longer time is required for the "complete" report; probably a minimum of one month.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** Level 3 implies a log is kept, but the information could be kept in some other form. The important point is that the supporting documents be available.

Also, please refer to our response to Q40 and suggestion that the report be split into

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preliminary and final versions.



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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** This Requirement needs to be reviewed with respect to the OLDTF report. If the Requirement refers to documenting SOL violations as defined by the OLDTF, then reporting may be required to the Regional Council. If the requirement refers to IRL Compliance Violations, then the RA needs to submit that report to the Regional Council and NERC.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:** In the ERCOT Region, ERCOT uses ratings provided by the equipment owners to determine the limits. The TOP doesn't determine them.

**If yes, please identify what you feel should be added.**

**In some Regions or Interconnections, the RA may delegate certain tasks to other functions, though the RA is responsible for ensuring that these tasks are performed. There needs to be some kind of general statement to this effect. This is being addressed in the Functional Model.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** Should consider the definitions and recommendations developed by the Operating Limit Definition Task Force as endorsed by the Operating Committee.

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** Neither version provides a completely orderly and logical flow. That being said, if there is a requirement to pick one over the other, Version B is much more preferable. (follows a more logical flow of the two). Requirements are not buried like requirements 10 / 11 / 12 in version "A".

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Building upon comments above, no entities should have to search through a number of Compliance templates to find all of the requirements applicable to them. Version B still has this in that 207 remains buried after TOP requirements.

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<b>STD Commenter Information (For Individual Commenters)</b>	
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial Regulatory or other Govt. Entities



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Yes

No

**Comments:**

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

**Comments:** Need to allow for requesting additional data not previously requested for the original database, but not necessarily associated with a new facility. Very often a State Estimator or Operational Planning studies will identify the need for additional information for an area where the solution is not as good as desired, and additional information for existing facilities to improve the model or additional real-time measurements will be requested to allow a better solution.

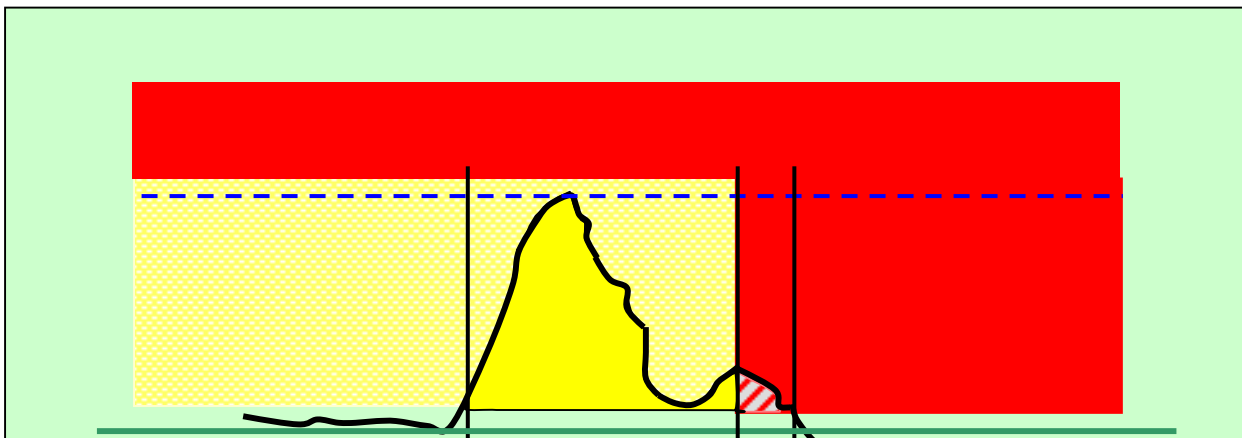
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

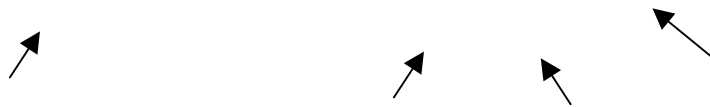
No

**Comments:** an “Industry Accepted Format” does not exist.



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

X  Yes

No

**Comments:** A diagram such as this should be part of the Standard, but the green solid line and the blue dashed line should be deleted as they have no relevance and are confusing.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

X  Yes

No

**Comments:** If you mean the red slashed zone, then yes. The solid red should be removed as it is irrelevant and confusing.

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

REAL

Surrogate (requirement 2)

DATA

“Problems” (requirement 10)

If possible, please provide us with a definition for each of these terms.

8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

BA

TOP

X  Generator

Planning Authority

Comments The generator Owner or Operator should provide the unit characteristics and the real-time data.

9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

RA

BA

X  Generator

Planning Authority

Comments The generator Owner or Operator should provide the unit characteristics and the real-time data.

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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Thermal Overloads are not specifically mentioned. Is that assumed to be the cause of the Cascading Outages?

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** # 4 is reasonable, but the other levels of non-compliance are related to data availability, not to the requirement that the RA monitor limits and associated data. The responsibility for data availability rests with those providing the data. At the most, the RA should have processes and procedures (and alarms?) in place to make them aware of when the data is bad...ie, when a real-time measurement has not been available for xx minutes, or when a data point value has not changed for xx minutes. (It is possible for the data link to be bad and for data to still be coming in but not updating).



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** According to the Functional Model,

“The **Transmission Operator** operates and maintains the transmission facilities, and is responsible for local reliability functions. The Transmission Operator under the Reliability Authority’s direction can take action, such as implementing voltage reductions, to help mitigate an Energy Emergency.”

This does not say that the Transmission Operator is responsible for the reliability of the bulk Power System. Does the term “operate” in the functional model include the responsibility to “monitor”?

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See response to Requirement 1

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** In the text of the Requirement, the term "Generators" is not definitive enough to describe who is responsible for providing the "data". A Generator Operator may not have access to the dynamic model, and the Generator Owner may not have access to the real-time data.

TOW needs to be added to the text of the requirement as one of the entities responsible for providing data to the RA.

The words "Industry Accepted Format" and "technically accurate" should be deleted from the Measures, since an Industry Accepted Format does not exist, and at times Technically Accurate information is not available. There may not be generator test data available, so default data is used in the studies. Maybe "best available data" would be more realistic. Actually, I suggest that the text for measures 1 & 2 be modified to end at 'timeframe', and the rest of the sentence be deleted.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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some data technically inaccurate or incomplete )

2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Re-word #1 to remove “Industry accepted format” and “technically inaccurate”. Very often the initial data specification will include what is perceived as necessary at the time, and later additional data will be requested. I don’t think a data request from the RA could ever be considered ‘complete’, if that means that every bit of information has been specified that ever could possibly be needed. # 2 seems ok.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** In the text of the Requirement, the term "Generators" is not definitive enough to describe who is responsible for providing the "data". A Generator Operator may not have access to the dynamic model, and the Generator Owner may not have access to the real-time data.

TOW needs to be added to the text of the requirement as one of the entities responsible for providing data to the TOP.

The words "Industry Accepted Format" and "technically accurate" should be deleted from the Measures, since an Industry Accepted Format does not exist, and at times Technically Accurate information is not available. There may not be generator test data available, so default data is used in the studies. Maybe "best available data" would be more realistic. Actually, I suggest that the text for measures 1 & 2 be modified to end at 'timeframe', and the rest of the sentence be deleted.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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- 2. Data was not requested **OR** there was no record of specification
- 3. Not Applicable
- 4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Re-word #1 to remove “Industry accepted format” and “technically inaccurate”. Very often the initial data specification will include what is perceived as necessary at the time, and later additional data will be requested. I don’t think a data request from the RA could ever be considered ‘complete’, if that means that every bit of information has been specified that ever could possibly be needed. # 2 seems ok.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes
- No

**Comments:**The requirement for providing data should rest with the entity energizing the new equipment. Maybe should change the “no less than 7 days” language to say “as specified by the requesting entity, but no less than 7 days”. The RA may not legally be able to pass data that it received from one TOP to another TOP because of confidentiality requirements. A TOP that needs data from another TOP should make arrangements to get that data directly. The RA to RA link is ok. Also, data requests may not necessarily be limited to “new facilities or changes to existing facilities”.

**Levels of Non-compliance for this Requirement:**

- 1. Not Applicable
- 2. Not Applicable
- 3. Not Applicable
- 4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Again, a data request may not necessarily pertain to new or revised facilities. Requirement must be made more generic.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The language “no less than 7 days prior to the energization of new facilities or changes to existing facilities” is not relevant to BA data, since the BA is not normally involved with new facilities and the data requested from a BA is very different than from the other functions.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** delete new/revised facilities

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** The language “no less than 7 days prior to the energization of new facilities or changes to existing facilities” is not relevant to IA data, since the IA is not normally involved with new facilities and the data requested from a IA is very different than from the other functions.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** delete new/revised facilities

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Data provision should not be limited to “the energization of new facilities or changes to existing facilities” and the timeline should be set by the data requestor.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** delete “for new/revised facilities”



**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** requirement should be on Generator Owner or Operator, and the timeline specified by the requesting entity. Delete “the energization of new facilities or changes to existing facilities”. BA should receive data from Generator also...timeline as specified by requesting party, but no less than 7 days...

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** delete new/revised facilities

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

### **Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### **Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **28. Do you agree with this requirement?**

Yes

No

**Comments:** Lots of comments here....what is the definition of "problems"? Is the requirement saying that studies must be done until they come up with a scenario that would cause instability, etc? Taken literally, that is what this requirement is asking for. Must the studies run until they identify the 6-line, 3-substation outage combination that would tip the system over the edge? Realistically, the requirement should specify "n-1, n-2" types of studies, or "credible contingencies", etc. Required analyses should be in line with the NERC Reliability Criteria. The requirement seems to be backwards. The RA should evaluate its current operating condition to assess that the system is secure from instability, etc. If the Operational Planning studies were done correctly, no "problem" should be identified that could cause instability, etc. Also, there is nothing in the requirement that indicates a "program should run", but that is what the measure and the compliance levels are related to. This seems to have been made (inadvertently?) very specific to real-time analysis programs, and I don't believe that is the intent. The outcome mentions "shall run programs" but nothing is said about this in the requirement. Having a dispatcher (operator) assess the condition of the power system is valid "reliability analyses" according to the explanation of terms at the front of this comment form, but I don't believe this could be considered running an analysis program.

### **Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

### **29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Compliance levels are not related to the requirement. A better measure would be whether the RA recognized (or didn't) that there was a need to perform analysis, and whether the analysis was done (or wasn't). The measures and compliance should assess whether the RA did analysis rather than program performance.

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Again, according to the Functional Model the TOP has no responsibilities related to the bulk transmission system. Also see comments to Requirement 10.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments to Requirement 10

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

### Requirement 12:

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

### Measure(s):

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### Outcome(s) (100% Compliance):

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 32. Do you agree with this requirement?

Yes

No

**Comments:** Functional Model requires RA to “direct” actions rather than “take” actions. TOP or BA would be the entities actually “taking” action. Again, need to know definition of “problems”. Is there a requirement for 3-year retention of information associated with this requirement?

### Levels of Non-compliance for this Requirement:

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### 33. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Suggest revising as follows:

1. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no reportable violations occurred
2. Monitoring and/or reliability analyses identified a problem – correct action was taken but not to the extent necessary. Reportable violation occurred.
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken. Reportable violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** TOP has no responsibility for the bulk transmission system. Functional Model says that “Transmission Operator under the Reliability Authority’s direction can take action, such as implementing voltage reductions, to help mitigate an Energy Emergency.” This does not indicate that the TOP can react unilaterally based on real-time monitoring or reliability analyses.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** TOP does not have this responsibility

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement does not specify “documented, approved” mitigation plan but the Outcome and Levels of Non-Compliance use this language. Who is responsible for approving the plan?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** #1 is not consistent with the requirement. #4 is ok.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement does not state that the documented plan must be approved. Requirement states that actions “prevent exceeding” but the outcome says “remain/return to within”. These are not consistent. Again, TOP has no responsibility for the bulk transmission system.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan’t approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** #1 is not consistent with the requirement. #4 is ok

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** Requirement should state that “report within 72 hours” on instances...

Rather than use “where a system operating limit has been exceeded for a specified period of time” should use “where a reportable violation occurred” and define “reportable violation” elsewhere. In Measure 3, “magnitude” of violation is mentioned for the first time in this standard. I can find no place that includes magnitude as a characteristic of a reportable violation. Suggest moving (EMS or other source of data) to be directly after “supporting documentation” to make it clear that this is what is meant by “supporting documentation”. Duration of violation must be defined...is it just the time of the red-hash mark area of the chart, or is it the yellow area plus the red-hashed area? In measure 3, should “event” be replaced with “reportable violation”?

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes



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**No**

**Comments:** need to clearly define "supporting documentation" vs. "documentation". What about if a complete report was filed but it came after 72 hours? Is it preferable to file an incomplete report on time and follow up with a complete report later? Also – should "incident" be replaced with "reportable violation"?

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement is for TOP to document exceeding system limits, regardless of duration? What is "data" in the measure referring to?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**Requirement that “TOP Shall Provide” data, as specified**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** Liked Version B because it lays out separately the requirements for each entity, but the compliance information should be associated with each requirement rather than in the big list at the bottom. It is difficult to sort out which compliance refers to which requirement.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** highlighting the requirements better and using tabs and font sizes to delineate between the different sections could improve format.

**48. Please list any other comments you may have in the space below.**

**Comments:** there were content differences in addition to format differences between Version A and Version B. These differences should be resolved. I will use Version B as the reference:

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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1. Page 1 of 19, footnote 1 – data can be analog or digital
2. Page 2 of 19, 201(b) 6. does not appear in Version A. “Reliability Analysis Programs analyze all system operating limits....”
3. Page 3 of 19, 201(e), third mark – the language “and identifies any problems...” Does not appear in Version A
4. Page 3 of 19, 201(e), 6<sup>th</sup> mark does not appear in Version A. “Reliability analysis programs analyze all system operating limits
5. Page 3 of 19, 201(f) 3, second mark is not in Version A “No analysis tool was available for use...”
6. Page 3 of 19, 201(f) 3, fourth mark is not in version A “there was a system operating limit violation, but...”
7. Page 5 of 19, 202(b) #6, is not in Version A
8. footnote at bottom of page 5 should include operator assessment as part of the definition of Reliability Analyses
9. Page 7 of 19, 201(f)3, second mark is not in version A “no analysis tool was available”
10. Page 8 of 19, 203(a) : words “approved, documented” were not in Version A
11. Page 8 of 19, 203(b) language is different than in Version A
12. Page 9 of 19, 204(a) word “approved ” was not in Version A
13. Page 9 of 19, 204(b) shoul reference TOP instead of RA
14. Page 10 of 19, 205(a) Requirement is written much differently than in Version A
15. Page 10 of 19, 205(b) Version A uses better language for the Measures
16. page 11 of 19, 205(f)4, second mark – does not exist in Version A

General comment: please get rid of the “marks” and make every item clearly identifiable with a number or letter reference.

That’s all for this round of comments....



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** Data should be defined

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:** Describe what a manual study will consist of. Reliability analysis should only be performed by the RA, not the TOP.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

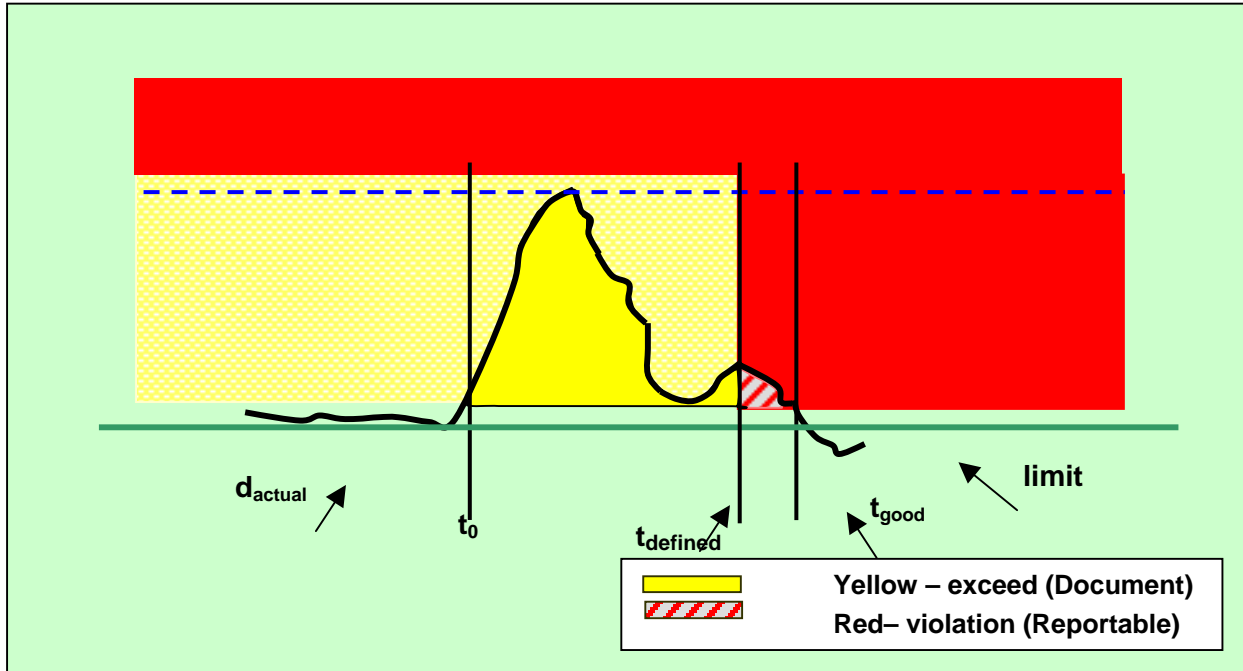
**Do you agree?**

**Yes**

**No**

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Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments: Wait until the OLDTF defines this.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments: Wait until the OLDTF defines this

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments



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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** Collection of data should be an RA responsibility

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** TOP is not required to gather and provide data to the RA.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days is not enough time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days is not enough time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what data the IA would be required to provide.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days is not enough time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Seven days is not enough time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** Define how often the studies should be performed.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** The RA should perform this analysis

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** RA should prevent an identified problem beforehand. He can only mitigate when there is an actual emergency.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** See #32. The TOP should resolve an identified problem with the cooperation of the RA.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Contingency plan is a better choice of wording for this requirement than mitigation plan.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Same as #36

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** Wait until the OLDTF study is complete.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:**



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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** See #40.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**It has been shown that there are significant regional differences both in agreements between TOPs and RAs, and in the modeling capabilities and programs available. The SAR states that regional differences are 'none identified'. This is not true. RA audits in SERC for one identified many differences that should be taken into consideration.**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Guy Zito
Organization	NPCC
Industry Segment #	2
Telephone	212-840-1070
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>CP9</i>	<b>Group Chair:</b> <i>Guy Zito</i>	
	<b>Chair Phone:</b> 212-840-1070	
	<b>Chair Email:</b> gzito@npcc.org	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Steve Wokanovicz for Ralph Rufrano</i>	<i>NYPA</i>	<i>1</i>
<i>Roger Champagne</i>	<i>TransEnergie</i>	<i>1</i>
<i>Greg Campoli</i>	<i>NYISO</i>	<i>2</i>
<i>Dan Stosick</i>	<i>ISO-NE</i>	<i>2</i>
<i>David Kiguel</i>	<i>Hydro One</i>	<i>1</i>
<i>David Little</i>	<i>Nova Scotia Power</i>	<i>1</i>
<i>Barry Gee</i>	<i>National Grid US</i>	<i>1</i>
<i>Vinod Kotecha</i>	<i>ConEd</i>	<i>1</i>
<i>Andrew Wilcox</i>	<i>New Brunswick Power</i>	<i>1</i>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** We agree however would urge the terms used in the standards be explicitly defined and quantified.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:** We recommend substituting Reliability Analysis with operational planning analysis and real time assessment as appropriate to short term or long term studies. Also the term real time needs to be explicitly defined. Although the footnote appearing on page one of Version A defines "Real Time" it is still unclear if this is restricted to data extracted from the Energy Management Systems.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** The certification process for the RA/TOP is in itself an insufficient vehicle to attain correct modeling data. It is felt that the submission of data reflecting changes to the system may reduce documentation but may unnecessarily restrict the RA's to a potentially incomplete data collection process. For example, in some cases the RA may choose to create study models as new base cases on a seasonal basis. Therefore, the exchange of information has to be handled differently to ensure all parties receive the information in a timely manner such that the operating models in adjoining regions do not lead to different results.

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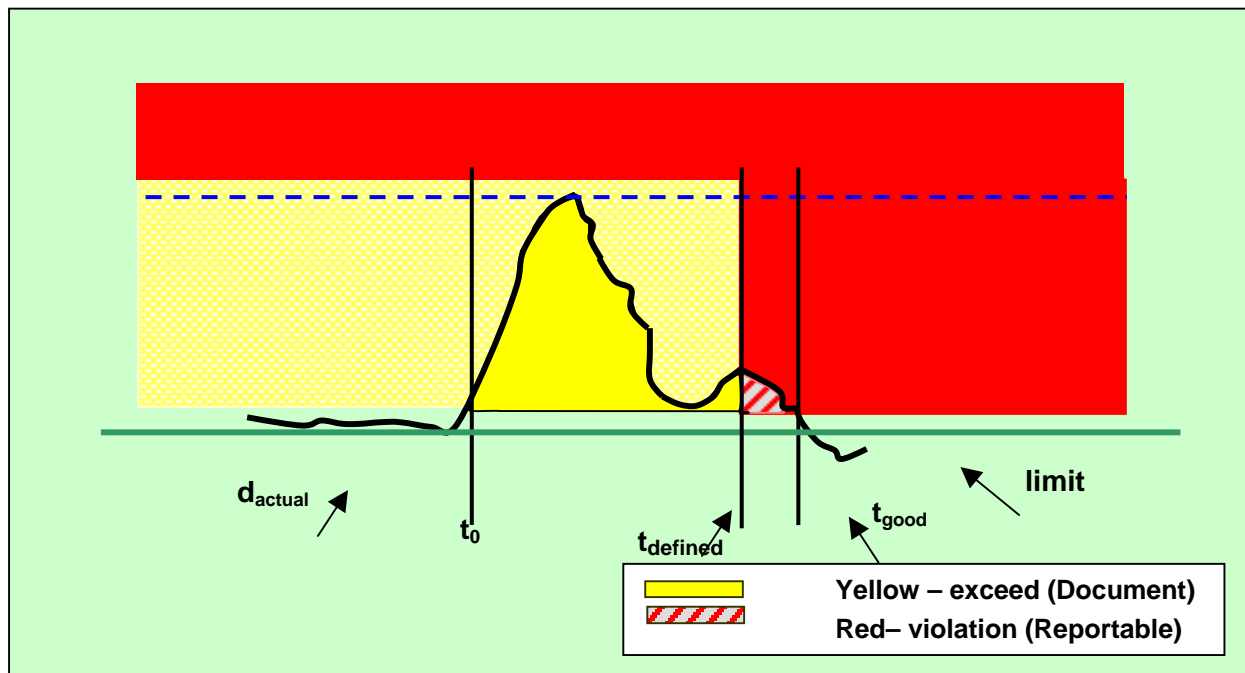
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

**Comments:** Yes, however "Industry Accepted Format" must not be overly perscrutive and must not preclude mutually agreed upon data exchange methods between adjoining areas. Also how is it proposed to handle "proprietary data"?



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating

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Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

**Yes**

**No**

**Comments: This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Real Time**

**Self-Certification**

**Compliance Reset Period**

**Instability**

**Cascading Outages**

**Uncontrolled Separation**

**If possible, please provide us with a definition for each of these terms.**

The Compliance reset period should be defined as 12 months without a violation from the time of the last violation.

Either provide a definition with "actual telemetered data" or replace it with "real time data", throughout this document.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** The levels of non-compliance should not be gauged by the availability of telemetered data but should be measured by the RA's ability to monitor System Operating limits.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Level 4 is the most important metric for this Requirement and we feel that Level 1, 2 and 3 are unnecessary.



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** The levels of non-compliance should not be gauged by the availability of telemetered data but should be measured by the RA's ability to monitor System Operating limits.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Level 4 is the most important metric for this Requirement and we feel that Level 1, 2 and 3 are unnecessary.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** A form needs to be developed to allow the different authorities to submit this data.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** See previous comment on the term "industry accepted format". We also felt that compliance monitoring doesn't belong in the requirement section of this document but may reside in another document pertaining to compliance.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** A form needs to be developed to allow the different authorities to submit this data.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** See previous comment on the term "industry accepted format". We also felt that

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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compliance monitoring doesn't belong in the requirement section of this document but may reside in another document pertaining to compliance.

### **Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

### **Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

### **Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

### **18. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

### **19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

- Yes  
 No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** It should be noted that prevention and mitigation are actions that may be undertaken in two different timeframes.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

Further clarification is requested regarding the difference between violation and limit violation.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** It should be noted that prevention and mitigation are actions that may be undertaken in two different timeframes.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

Further clarification is requested regarding the difference between violation and limit violation.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** It is only necessary to have a procedure in place that relieves the SOL violation. It is unclear if a mitigation plan requires external approvals and by whom.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** It is only necessary to have a procedure in place that relieves the SOL violation. It is unclear if a mitigation plan requires external approvals and by whom.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether



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these levels are appropriate.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**We are questioning whether voltage collapse reqts. should be acknowledged.**

**Confidentiality issues could be addressed**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Subtitles should be added to sectionalize the standard and a table of contents added.

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Stuart Goza
Organization	TVA
Industry Segment #	1
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

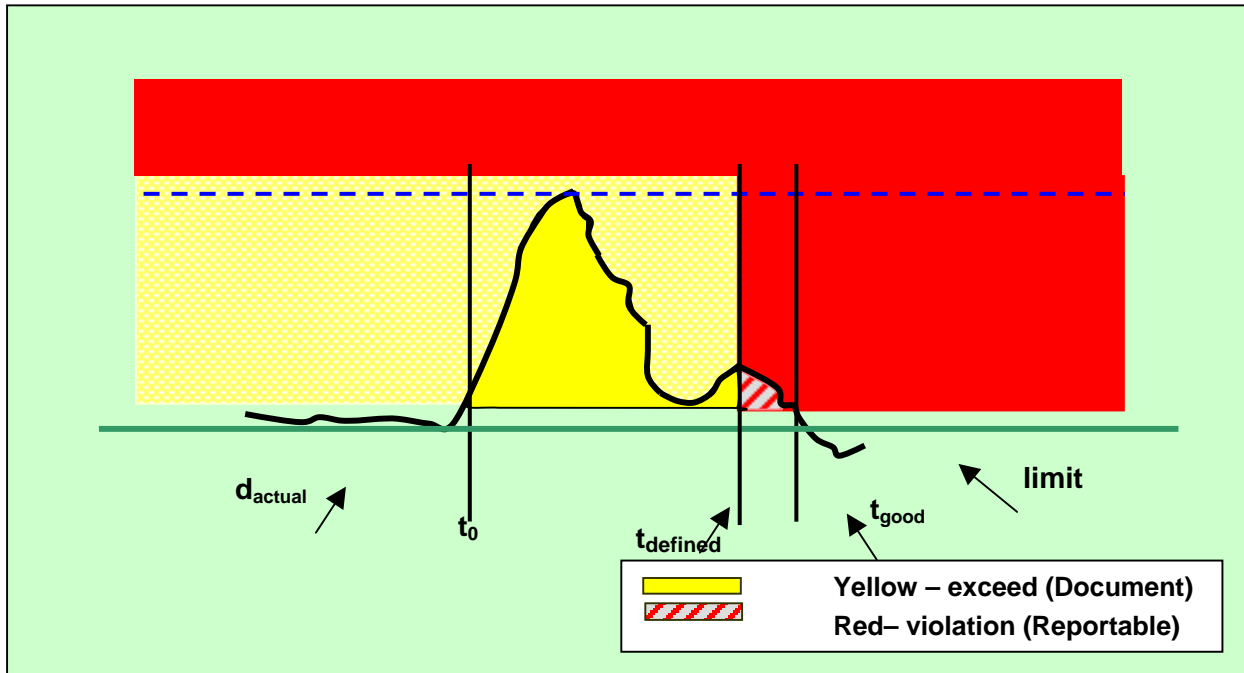
**Do you agree?**

**Yes**

**No**

**Comments:**

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments: Assuming that the term “limit” is appropriately defined.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

NERC OC has a special task force, the Operating Limit Definition Task Force that is specially addressing definitions for System Operating Limit and Interconnected Reliability Limit. The results of this task force, if approved by NERC OC should be reflected in the terminology used in this standard.

1. Define uncontrolled separation
2. Define uncontrolled cascading
3. Define controlled separation
4. Define controlled cascading
5. Define instability
6. Define System Operating Limit
7. Define System Operating Limit Violation
8. Define Interconnected Reliability Limit
9. Define Interconnected Reliability Limit Violation
10. Facility Rating Methodology and Triggering Criteria for above conditions
11. RA, BA, IA roles need to be clarified

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- RA
- BA

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**Generator**

**Planning Authority**

**Comments**



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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** The applicable term "system operating limit" needs clarification.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be some realistic acceptable period for failed telemetry before Level 1 violation occurs.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** The applicable term "system operating limit" needs clarification.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be some realistic acceptable period for failed telemetry before Level 1 violation occurs.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **16. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### **17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** Action taken must be coordinated with RA.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**STD Commenter Information (For Individual Commenters)**

Name Ken Skroback  
Organization Alabama Electric Cooperative  
Industry Segment # 4  
Telephone 334-427-3257  
E-mail ken.skroback@powersouth.com

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

STD Commenter Information (For Groups Submitting Group Comments)		
Name of Group:	Group Chair:	
	Chair Phone:	
	Chair Email:	
List of Group Participants that Support These Comments:		
Name	Company	Industry Segment #

1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?

x  Yes  
 No

Comments:

2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.

Do you agree?

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

**Comments:** These assumptions work in the new NERC model but don't apply to a small utility (G & T) that is not separated and serves as its own control area. Since non separated utilities are prevented from receiving data from RA's, some of these studies are conducted by the RA using data provided by us to them.

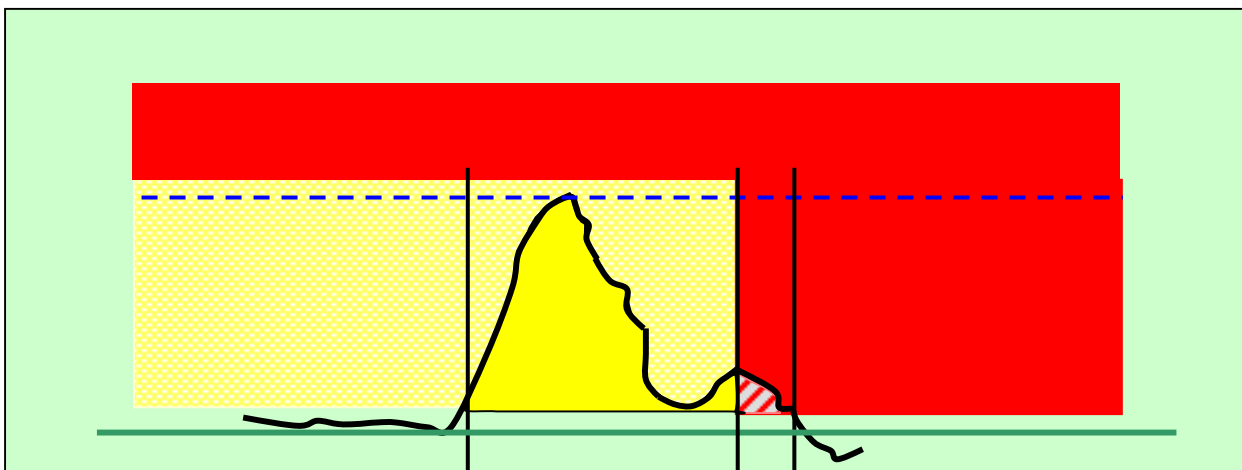
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

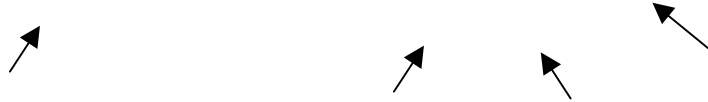
No

Comments:



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** The above graph is unlabeled and I can't tell anything about it.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** The above graph is unlabeled and I can't tell anything about it.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** In Measures 1 & 2, if comparing real-time data to predefined limits in the EMS computer is acceptable, then I am in agreement. Otherwise I am not in agreement.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** I think that there needs to be some way to accommodate short term data outages such as a loss of a transducer, an RTU failure or a telecom failure without causing non-compliance. Maybe a loss of data up to 24 hours would be compliant while those exceeding 24 hours are not. At some point everyone will have some equipment failures.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

---

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** These assumptions work in the new NERC model but don't apply to a small utility (G & T) that is not separated and serves as its own control area. Since non separated utilities are prevented from receiving data from RA's, some of these studies are conducted by the RA using data provided by us to them. We currently don't receive data from other entities, although we provide data to them, and yet our study needs are being met. Since we have no current need for this data, we have no specifications and we have no record of correspondence. According to these measures we would be level 2 non-compliant, yet our study needs are met. I would like a statement in all three measures that states "as required" or "if needed".

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

---

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** See # 16 above.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** In outcomes you say that the mitigation plan must be approved. Approved by whom?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level 1: Approved by whom?

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** If you had no instance of exceeding an operating limit, no documentation would exist and you would be Level 4 non-compliant.



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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Raj Rana
Organization	AEP
Industry Segment #	1,3,5,6
Telephone	614-716-2910
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- |   |
|---|
| <p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul> |
|---|

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
Name	Company	Industry Segment #

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** "Data" should also include manually monitored values. That is the standard should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

Yes

No

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** This standard should define the minimum type of data that is to be provided to the RA, similar to Policy 4B and Appendix 4B requirements today. Additionally, we disagree with the proposal that TOP functions need to be certified and stated such during the first comment period for the organizational SARs.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

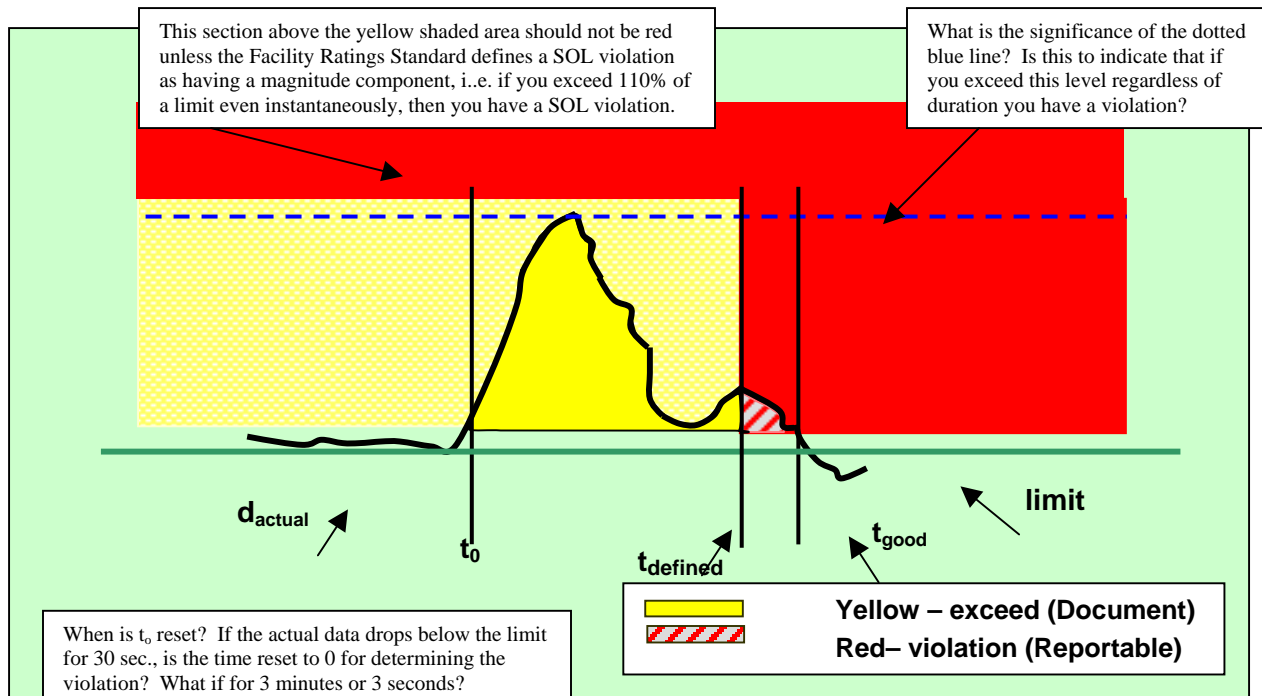
**Do you agree?**

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Yes

No

**Comments:**



**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

Yes

No

**Comments:** See comments about the graph in the white comment boxes above on the graph. The graph is hard to understand and interpret.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

Yes

No

**Comments:** We agree that operating above the limit and to the right of T-defined is a reportable violation. We do not agree with the concept of having the Facility Ratings

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**Standard adopt a magnitude componet to the definition of a SOL violation. We do not believe a momentary or short term deviation above the dotted blue line should be defined as a reportable event. Further, what should be defined as the "limit?" The goal is to prevent operating above a reliability limit, that if exceeded could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. So is the "limit" that value as determined by either the Planning Authority or the RA via their analysis or is it the value that the TOP provides and indicates that he is willing to load his equipment to, recognizing that some TOP's may specifiy a value that is less then true reliability limit?**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Identified problem**

**If possible, please provide us with a definition for each of these terms.**

Identified problem: Does the term "identified problem" as used in this standard refer to a problem identified through reliability analysis, either for actual conditions or on a first contingency basis, that if it were to occur could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system or does it also include thermal overloads and voltage conditions that do not lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system?

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments** The Generator is the best possible resource to provide the data. The Generator must have an interconnection agreement with a TOP, and said agreement should require the Generator to provide this information. Thus, the RA should be able to receive this type of information from the TOP. The PA should also have this information, which they may have received from the TOP or the Generator directly.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments** Should be required via the TOP's interconnection agreement with the Generator.

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

Please use Version A of the draft standard to answer these questions.

### Requirement 1:

The RA shall monitor (in real time) the data associated with facilities that have defined the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system). and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are defined and available. in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The RA shall monitor in real time facilities with system operating limits and compare these against the actual data associated with those limits.

### 10. Do you agree with this requirement and its associated performance/outcome and measure/s?

- Yes  
 No

**Comments:** We agree with the intent, but it is not written clearly. The RA should monitor, in real time, the data associated with the facilities that have defined system operating limits that if exceeded for a defined time limit (to be defined by the Facility Ratings Standard) could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Additionally, the RA should be required to monitor the system and facilities for the impact of the next contingency.

This standard requires the RA to only monitor the data associated with facilities that have defined operating limits identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. What about those thermal overloads and voltage conditions that do not result in catastrophic events? Should this standard ignore those thermal overloads and voltage conditions that will not result in instability or catastrophic events?

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 11. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

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**Comments:** Loss of telemetry should not result in a non-compliance. Taking no action to correct the problem of missing data or to obtain the data via another means, such as requiring the TOP to station an operator at the station or plant to monitor and report the data until such time that telemetry is restored, should be a non-compliance. Additionally, the problem could be due to a telemetry problem at the TOP, so why would the RA be penalized? Also, the problem could be within the ISN, again not within the direct control of the RA. Define "surrogate value" and "surrogate data"



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** This requirement is duplicative to Requirement 1 for the RA. The standard should require that system conditions be monitored to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The standard should require either the RA or the TOP to do this, but not require that they both do this. We prefer for the standard to require the RA perform this function, and that this is not a function that the RA can delegate to a TOP. The RA has a bigger picture, and can analysis the impact of one TOP on another TOP better then the TOP's can. Further, the RA has the real-time data required to monitor Regional conditions, that a TOP will not have.

This requirement should be re-worded to require that the TOP provide real time data, equipment limits, and model updates to their RA as specified by their RA.

This standard requires the TOP to only monitor the data associated with facilities that have defined operating limits identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. What about those thermal overloads and voltage conditions that do not result in catastrophic events? Should this standard ignore those thermal overloads and voltage conditions that will not result in instability or catastrophic events?

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

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Yes

No

**Comments:** If the requirement was changed to the TOP providing real time data, equipment limits, and model updates to their RA as specified by their RA, then the levels of non-compliance could be:

1) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for up to 24 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).

2) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 24-36 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).

3) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 36-48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).

4) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period greater than 48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant), or

the TOP did not station personnel at the Station or Plant as directed by the RA to provide this data while telemetry was being restored, or

the TOP did not provide equipment limits as requested, or

The TOP did not provide modeling update information until after the energization of new facilities.

Note: the idea is that depending on system conditions, the RA may be able to rely on their previous operational planning analysis (next day analysis) for a day or so. However, if system conditions warrant, the RA should have the authority to direct the TOP to man the station and if the TOP refuses that should be considered a significant infraction.

Need to define "surrogate value" and "surrogate data".

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** There needs to be an industry minimum specification for the type of data required, similar to Appendix 4B "Electric System Security Data." This is required to ensure a minimum standard is set for the type and quality of reliability analysis that the RA's are to perform. Additionally, as worded this requirement is too vague and burdensome to the TOP. Basically, it implies that if the RA requests a piece of information, the TOP is to provide that information regardless of cost or actual benefit to the RA of having the data (though nowhere in this standard is there a requirement for them to explicitly do so). There should be a requirement that the data requested meet an industry reasonability standard for being classified as reliability related data. An update of Appendix 4B could accomplish this.

Once the above commnet are addressed, then it is appropriate for the RA to specify and collect the data it needs, within the guidelines set forth in Appendix 4B, to maintian the models needed to support real time monitoring and reliability analysis.

There needs to be a requirement in this standard for the BA, IA, Generator and TOP to provide this data to the RA on an ongoing basis and the associated penalties for them if they do not. What good is it for the RA to specify the data they need if the those who have the data are

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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not required to continually supply it? Yes, this requirement does specify that the RA is to notify the Compliance Monitor if these entities do not provide the data requested. And yes, Requirement #8 requires the TOP to provide data no less than 7 days prior to energization of new facilities. But where is the requirement that says they must continually provide the data?

Additionally, without an industry minimum standard similar in concept to Appendix 4B, how do we resolve the issue where a RA desires individual unit dispatch information but the Generator and BA only desire to provide zonal dispatch data?

Also, the requirement of the RA to "collect the data it needs" is too vague. Also, the requirement of the RA specifying when to supply data is too vague. The data supplied should be data that is mutually agreed upon between the RA and respective party along with the timing of the request. The respective party should not have to obtain the same hardware and software as RA.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **16. Do you agree with this requirement?**

Yes

No

**Comments:** Unlike our position on Requirement #3, we support the vagueness of this requirement for the TOP. However, it needs to be reworded such as not to place a burden on the data providers. The data required by the TOP from the Generators will be specified in interconnection agreements between the TOP and Generator. These agreements are individually negotiated by each party, hence the Generator has the ability to minimize the burden of the data request and verify the need for the data via negotiations. Hence the support for keeping this requirement vague so as not to dictate the content of interconnection agreements. There may be an opportunity for an industry standard for the type of data to be provided by the BA and RA to the TOP, similar to Appendix 4B. This would help ensure that a TOP is only receiving data it really needs.

Additionally, without an industry minimum standard similar in concept to Appendix 4B, how do we resolve the issue where a TOP desires individual unit dispatch information but the Generator and BA only desire to provide zonal dispatch data?

Also, the requirement of the TOP to "collect the data it needs" is too vague. Also, the requirement of the TOP specifying when to supply data is too vague. The data supplied should be data that is mutually agreed upon between the TOP and respective party along with the timing

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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of the request. The respective party should not have to obtain the same hardware and software as TOP.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

Comments:

### Requirement 5:

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

### Measures:

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

### Outcomes (100% Compliance):

The RA shall provide data as requested, to its (associated) RA and/or TOP.

### 18. Do you agree with this requirement?

Yes

No

**Comments:** A RA should have to share data (modeling information) with their TOPs and any other RA that requests the information. The requirement needs to be clear that a TOP that desires data from an RA other than its own RA should ask their own RA for that data and then their RA would ask the other RA. The other RA (the RA with the data) then should have to notify and receive approval from the owner of the data (TOP or Generator) before providing the data for use by a non-associated TOP.

Why 7 days? If the intent is to ensure the requestor knows about the new facilities and can update their model before energization of the new facilities, then more than 7 days notice should be required. If the intent is to ensure the requestor is receiving the real-time data associated with the new facilities, then 7 days may be adequate.

Generally speaking, the TOP and Generator should be required to push data up to the RA, BA, and IA. The RA, BA, and IA should be required to specify the data they require within industry guidelines for reasonability.

### Levels of Non-compliance for this Requirement:

1. Not Applicable
2. Not Applicable

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3. Not Applicable

4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear whether the BA must supply this data to any requesting RA or just of the RA that has jurisdiction over the BA's area. We propose that the BA should only have to supply this information to his RA. Other RA's should contact the BA's RA for the information. Further, we suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?



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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes
- No

**Comments:** It is not clear whether the IA must supply this data to any requesting RA or just of the RA that has jurisdiction over the IA's area. We propose that the IA should only have to supply this information to his RA. Other RA's should contact the IA's RA for the information.

We suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

- Yes
- No

**Comments:** It is not clear whether the TOW must supply this data to any requesting RA or just of the RA that has jurisdiction over the TOW's area. We propose that the TOW should only have to supply this information to his RA. Other RA's should contact the TOW's RA for the information.

Why 7 days? If the intent is to ensure the requestor knows about the new facilities and can update their model before energization of the new facilities, then more than 7 days notice should be required. If the intent is to ensure the requestor is receiving the real-time data associated with the new facilities, then 7 days may be adequate.

We suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear whether the Generator Owner must supply this data to any requesting RA/TOP or just to the RA/TOP that has jurisdiction over the Generator. We propose that the Generator should only have to supply this information to his RA and TOP that he is connected to. Other RA's should contact the Generator Owner's RA for the information.

Why 7 days? If the intent is to ensure the requestor knows about the new facilities and can update their model before energization of the new facilities, then more than 7 days notice should be required. If the intent is to ensure the requestor is receiving the real-time data associated with the new facilities, then 7 days may be adequate.

We suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?

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### **Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### **Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **28. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement is too vague. How often should the RA perform a reliability analysis? How often should the RA request the program to run? Once a hour? Once a day? Once a week? Should the reliability analysis program be running every 5 minutes or every 10 minutes. Per this requirement, if the RA so chooses, he could perform the analysis every other day and argue that is enough. Is it? The requirement should be clear that there is an expectation that the RA is performing an operational planning analysis on a daily basis looking at next day to next week projected conditions. Further, the RA must have the capability to perform a reliability analysis on demand in order to identify problems either real-time or on a next contingency basis. Finally, the RA should have a reliability analysis program (state estimator) that runs (which means it solves) a minimum of every 10 minutes.

The Measure(s) section states the "program(s) run(s) when requested and identifies any problems that could cause instability", . . . etc. "Any problems" is pretty broad. Often, a reliability analysis program (state estimator and operator load flow) does not perform an analysis on all possible contingencies but rather only credible contingencies identified by the operator from other system performance appraisals performed by a Planning Authority, a Transmission Owner's Planning Section, RTO, or inter-regional study team. Do you really mean that the RA's analysis program must be able to perform an analysis for all possible single contingency events within their network model? Many real-time analysis programs do not do this, but most RA's also have access to off-line analysis programs that can meet this requirement. What is the intent here?

We would suggest the requirement be that the reliability analysis program have the ability to identify first contingency problems (problems that could cause instability, uncontrolled separation, etc.) based upon credible first contingency scenarios identified by performance appraisals conducted by the PA or TOW's Transmission Planning section.

Also, define the time horizon.

### **Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

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**29. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Non-compliance measures are too vague. What if the reliability analysis did not run when requested but ran within 5 or 10 minutes? What if the reliability analysis ran but the solution did not converge due to missing data, etc? There should be a different requirement and measure for real-time reliability analysis and operational planning analysis. Also, by the definition you provided, reliability analysis also includes system operator assessments. So by strict interpretation, as long as the RA's system operator assesses the situation, he would never be in violation of this requirement. As we said, this requirement and its measures are too vague.

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### Requirement 11:

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### Measure(s):

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### Outcome(s) (100% Compliance):

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 30. Do you agree with this requirement?

Yes

No

**Comments:** This is duplicative to Requirement #10. Why should the RA and TOP be required to perform the same analysis? We do not dispute that redundancy is good nor that many TOP's will perform this function. However, a NERC Reliability standard should not require the TOP to do this as this is clearly within the scope and function identified for the RA. The TOP should be clearly required to implement and follow the directives that an RA may issue due to their performance of a reliability analysis for their footprint. Further, we do not believe this is a function that the RA should be allowed to delegate to another party.

Define the time horizon.

### Levels of Non-compliance for this Requirement:

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

### 31. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Non-compliance measures are too vague. What if the reliability analysis did not run when requested but ran within 5 or 10 minutes? What if the reliability analysis ran but the solution did not converge due to missing data, etc? There should be a different requirement and measure for real-time reliability analysis and operational planning analysis. Also, by the definition you provided, reliability analysis also includes system operator assessments. So by strict interpretation, as long as the RA's system operator assesses the situation, he would never be in violation of this requirement. As we said, this requirement and its measures are too vague. Define the time horizon.

Should the concern be limited to those thermal overloads and voltage conditions that lead only to catastrophic events?

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### Requirement 12:

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take **and direct** actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken **or directed**.

### Measure(s):

Documentation showing that actions were taken **or directed** to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### Outcome(s) (100% Compliance):

The RA shall document actions taken **or directed** to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 32. Do you agree with this requirement?

Yes

No

**Comments:** We agree with the overall intent of this requirement. However, additional language is required. It seems the only desired outcome of this requirement is that the RA have documentation. Shouldn't another desired outcome be that the system is operated reliably? Hence a key component missing is that of the RA directing the TOP or BA to take action, as the RA typically cannot take any actions other than to give directives.

Should the concern be limited to monitoring only those levels of thermal overloads and/or voltage conditions that lead to catastrophic events?

How does this requirement fit with the current NERC TLR process?

### Levels of Non-compliance for this Requirement:

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### 33. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Level 2 states "no actions or incorrect actions were taken . . ." The determination that the RA's actions were incorrect would be by after the fact analysis performed by whom? Additionally, would it be necessary to determine whether the actions taken were due to gross negligence or due to an "honest" error or misinterpretation of the data? Would non-compliance sanctions differ based upon gross negligence vs. honest error?

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We are not sure what the difference between Level 2 and Level 3 is. Please clarify.

Some "what ifs": What if the system operating limit (SOL) was violated and thus the bulk transmission system was at risk but actual instability, uncontrolled separation, or cascading outages did not occur? What level of non-compliance should this be?

What if the SOL was violated, and the RA had directed the TOP and/or BA to take action but the TOP and/or BA did not take the action? As stated above, the RA is non-compliant. But, in reality the TOP and/or BA should be found non-compliant.

What if the SOL is violated, and the RA has directed the TOP and/or BA to take action, and they are in the midst of taking that action, but prior to the action being fully implemented, instability, uncontrolled separation or cascading outages occur? Is anyone non-compliant and if so at what level?



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### Requirement 13:

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses performed by either the RA or TOP, to take actions or follow directives of the RA as necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### Measure(s):

Documentation showing that actions were taken or RA directives followed to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### Outcome(s) (100% Compliance):

The TOP shall document actions taken or RA directives followed to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 34. Do you agree with this requirement?

- Yes  
 No

**Comments:** We believe having the duplicity of Requirement #12 and #13 is dangerous and could impede system reliability. The NERC reliability standards need to be clear where the authority resides. Having duplicate requirements for the RA and the TOP implies neither has the final say. The RA should and must have the final say. This requirement for the TOP needs to be reworded to show their subordinate role to the RA. The TOP shall follow the directives of the RA in order to prevent/mitigate identified problems.

How does this requirement fit with the current NERC TLR process?

Should the concern be limited to monitoring only those levels of thermal overloads and/or voltage conditions that lead to catastrophic events?

### Levels of Non-compliance for this Requirement:

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### 35. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** Level 2 states "no actions or incorrect actions were taken . . ." The determination that the actions were incorrect would be by after the fact analysis performed by whom? Additionally, would it be necessary to determine whether the actions taken were due to gross negligence or due to an "honest" error or misinterpretation of the data or misinterpretation of

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the directive given by the RA? Would non-compliance sanctions differ based upon gross negligence vs. honest error?

We are not sure what the difference between Level 2 and Level 3 is. Please clarify.

Some "what ifs": What if the system operating limit (SOL) was violated and thus the bulk transmission system was at risk but actual instability, uncontrolled separation, or cascading outages did not occur? What level of non-compliance should this be?

What if the SOL was violated, and the RA had directed the TOP to take action but the TOP did not take the action? As stated above, this is either a level 2 or level 3 non-compliance. But, what if the RA directed the TOP and the BA to take action and the TOP took the action but the BA did not? The TOP is compliant and the BA should be found non-compliant. But, per the above, the TOP is non-compliant too because the SOL was violated.

What if the SOL is violated, and the RA has directed the TOP and/or BA to take action, and they are in the midst of taking that action, but prior to the action being fully implemented, instability, uncontrolled separation or cascading outages occur? Is anyone non-compliant and if so at what level?

What if monitoring and/or reliability analysis identified a problem, and the RA directs the TOP to take specific action, but the TOP does not take the action? Does it matter whether the SOL was violated or not?

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### Requirement 14:

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

### Measures(s):

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

### Outcome(s) (100% Compliance):

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 36. Do you agree with this requirement?

Yes

No

**Comments:** We agree with the intent of this requirement. However, the language of the requirement needs to be modified. First, the wording in Version A and Version B are different. Which is correct? Version B explicitly states the plan must be approved in the requirement section, whereas version A only mentions the plan needing to be approved in the levels of non-compliance section. If the mitigation plan is to be approved, then by whom? We would hope by the Regions. Second, is it intended that this Plan replace the Region and/or RA Reliability Plans? Is this Plan just a section of those Plans? If so, isn't this part of the organizational requirement of the RA and thus covered elsewhere?

Third, how detailed do you want these plans? Are they just to state the congestion management procedures available to the RA, such as redispatch (LMP) and NERC TLR procedures? The requirement seems too vague as worded. Based upon what is expected to be included in reliability analysis under previous requirements in this document, it seems unreasonable to expect that all problems can have a one size fits all scenarios solution (mitigation plan). It does seem reasonable that the RA have a plan that states their congestion management practices and tools available. But that should be a requirement of be certified as a RA.

Define "mitigation plan".

### Levels of Non-compliance for this Requirement:

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

### 37. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** However, you need to define in the requirements section who is to approve the

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plan and be more specific as to what the approval requirements are. That is just how detailed does this plan need to be. However, if the intent is that each identified credible contingency scenario has its own action plan, that seems unrealistic unless this is at a superficial highlevel and then what is the point of the plan?

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** The development of mitigation plans and strategies should be a joint effort between the RA and TOP. But the responsibility should reside with the RA. If both are responsible for developing and having plans, what is to prevent them from having vastly different plans for the same problem? Who determines which plan is implemented?

Should the concern be limited to thermal overloads and/or voltage conditions that only lead to catastrophic events?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** However, you need to define in the requirements section who is to approve the plan and be more specific as to what the approval requirements are. That is just how detailed does this plan need to be. However, if the intent is that each identified credible contingency scenario has its own action plan, that seems unrealistic unless this is at a superficial highlevel and then what is the point of the plan?

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits (limits that if exceeded could lead to instability, etc.) and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** We agree with the intent of this requirement but believe modification to the language is required. Version A and B of this requirement differ slightly. Which is correct?

The requirement is not clear on whether the RA is to log and report just system operating limit (SOL) violations (i.e. the limit is violated for the time specified in the Facilities Rating SAR) of both violations and instances where the limit is exceed though a violation per the Facilities Rating SAR has not occurred. We believe the RA should complete a report for all SOL violations as defined in the Facilities Rating SAR, but momentary excursions should not have to be reported to the NERC CM.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes

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No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** We agree with the intent, but for this requirement the language is too brief. How long must the TOP keep this data?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**1) There is no requirement that reliability data recipients have to be a signatory to the NERC Data Confidentiality agreement. This needs to be codified somewhere in the new standards.**

**2) This standard should define the minimum type of data that is to be provided to the RA, similar to Policy 4B and Appendix 4B requirements today.**

**3) There should be a requirement that the TOP, BA, IA, PA, and Generators provide data on a continuing basis as requested (or as per the defined minimum data requirements suggested in #2 above) and needed by the RA to perform their reliability analysis.**

**4) There needs to be a definition of operational planning analysis and a requirement that sets the minimum standards of scope and frequency for such analysis.**

**5) There needs to be a requirement for the minimum frequency of performance of real-time analysis.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** We prefer neither of the versions. Neither version allows the reader to easily know what each Authority or entity is responsible for. Version B comes the closest.

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**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** As one reviewer stated, "this draft standard is worse then reading the Federal Register."

**48. Please list any other comments you may have in the space below.**

**Comments:** Obviously, we believe this draft is not yet ready for going to ballot. Of course, that wasn't your intent at this point. However, we question the wisdom of this standard ever going to ballot before the Facilities Rating Standard is also developed and ready to go to ballot. We would suggest that this standard should be developed the Facility Rating Standard. Otherwise assumptions regarding limits and violations made by this standard may turn out to be vastly different then the intent of the Facility Ratings Standard.

We appreciate the hard work of the standards drafting team and look forward to the next draft.



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** We agree however would urge the terms used in the standards be explicitly defined and quantified.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:** We recommend substituting Reliability Analysis with operational planning analysis and real time assessment as appropriate to short term or long term studies. Also the term real time needs to be explicitly defined. Although the footnote appearing on page one of Version A defines Real time it is still unclear if this is restricted to data extracted from the Energy Management Systems.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** The certification process for the RA/TOP is in itself an insufficient vehicle to attain correct modeling data. It is felt that the submission of data reflecting changes to the system may reduce documentation but may unnecessarily restrict the RA's to a potentially incomplete data collection process. For example, in some cases the RA may choose to create study models as new base cases on a seasonal basis. Therefore, the exchange of information has to be handled differently to ensure all parties receive the information in a timely manner such that the operating models in adjoining regions do not lead to different results.

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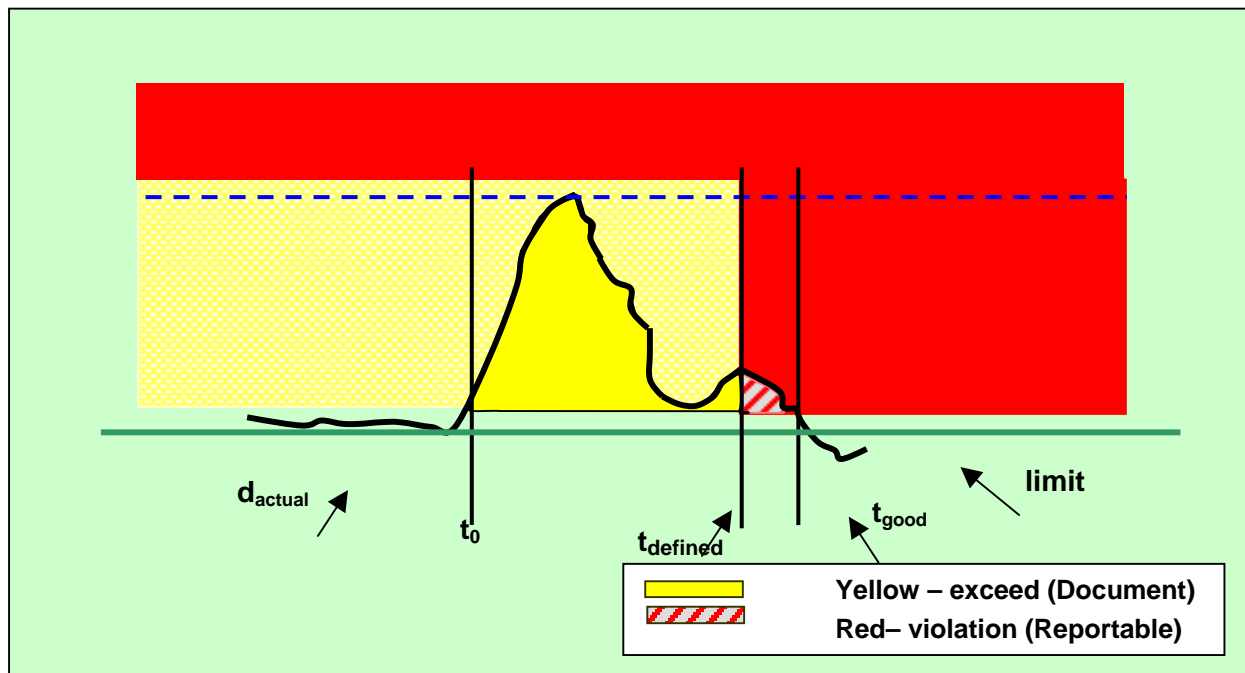
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

**Comments:** Yes, however "Industry Accepted Format" must not be overly perscrutive and must not preclude mutually agreed upon data exchange methods between adjoining areas. Also how is it proposed to handle "proprietary data"?



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating

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Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

**Yes**

**No**

**Comments: This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Real Time**

**Self-Certification**

**Compliance Reset Period**

**Instability**

**Cascading Outages**

**Uncontrolled Separation**

**If possible, please provide us with a definition for each of these terms.**

The Compliance reset period should be defined as 12 months without a violation from the time of the last violation.

Either provide a definition with "actual telemetered data" or replace it with "real time data", throughout this document.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** The levels of non-compliance should not be gauged by the availability of telemetered data but should be measured by the RA's ability to monitor System Operating limits.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Level 4 is the most important metric for this Requirement and we feel that Level 1, 2 and 3 are unnecessary.



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** The levels of non-compliance should not be gauged by the availability of telemetered data but should be measured by the RA's ability to monitor System Operating limits. Please see our comments under item # 44 (Regional and Interconnection Differences).

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level 4 is the most important metric for this Requirement and we feel that Level 1, 2 and 3 are unnecessary.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** A form needs to be developed to allow the different authorities to submit this data.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** See previous comment on the term "industry accepted format". We also felt that compliance monitoring doesn't belong in the requirement section of this document but may reside in another document pertaining to compliance.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** A form needs to be developed to allow the different authorities to submit this data. Please see our comments under item # 44 (Regional and Interconnection Differences).

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** See previous comment on the term "industry accepted format". We also felt that

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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compliance monitoring doesn't belong in the requirement section of this document but may reside in another document pertaining to compliance.

### **Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

### **Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

### **Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

### **18. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

### **19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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### **Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

### **Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

### **Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

### **24. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

### **25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance. Please see our comments under item # 44 (Regional and Interconnection Differences).

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** It should be noted that prevention and mitigation are actions that may be undertaken in two different timeframes.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

Further clarification is requested regarding the difference between violation and limit violation.

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** It should be noted that prevention and mitigation are actions that may be undertaken in two different timeframes. Please see our comments under item # 44 (Regional and Interconnection Differences).

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

Further clarification is requested regarding the difference between violation and limit violation.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** It is only necessary to have a procedure in place that relieves the SOL violation. It is unclear if a mitigation plan requires external approvals and by whom.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** It is only necessary to have a procedure in place that relieves the SOL violation. It is unclear if a mitigation plan requires external approvals and by whom. Please see our comments under item # 44 (Regional and Interconnection Differences).

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether



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these levels are appropriate.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved. Please see our comments under item # 44 (Regional and Interconnection Differences).

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:** There are differences in some Areas. For example, in Ontario the IMO is solely responsible to determine operating limits and to direct the operation of the IMO-Controlled Grid within these limits. The Transmission owners/operators operate their respective systems under the IMO's direction. They only provide the IMO with equipment ratings which the IMO must respect. The transmission operators do not determine operating limits or monitor/report their compliance.

**If yes, please identify what you feel should be added.**

**The standard should reflect jurisdictional differences in the responsibilities assigned to the RA and TOP in some areas.**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**We are questioning whether voltage collapse and underfrequency loadshedding reqts.**

**Confidentiality issues could be addressed**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Subtitles should be added to sectionalize the standard and a table of contents added.

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Lee Westbrook
Organization	Oncor
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Telephone	214-743-6823
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UP.COM	

- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial Regulatory or other Govt. Entities



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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

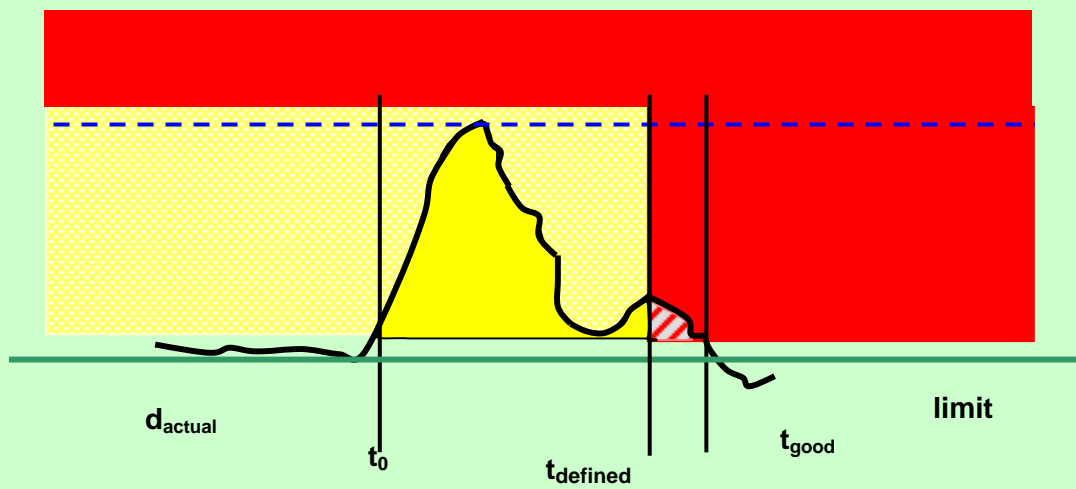
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

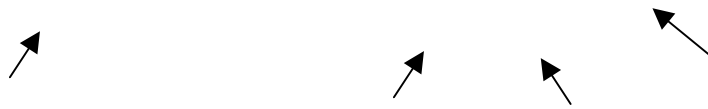
No

Comments:



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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

Yes

No

**Comments:** Graph needs more information to clarify question.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

Yes

No

**Comments:**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9.**

**10. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments**



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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **11. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Since limits may specify both magnitude and duration, real time data may need to be integrated to compare to limits. That should be made more apparent here or in the definition of data.

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **12. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**13. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** See Requirement 1 comment.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**14. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**15. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**16. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **17. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### **18. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**19. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**20. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**21. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**22. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**23. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**24. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**25. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**26. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**27. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**28. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**29. Do you agree with this requirement?**

Yes

No

**Comments:** Do the analyses include the calculation of operating limits?

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**30. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**31. Do you agree with this requirement?**

Yes

No

**Comments:** See Requirement 10.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**32. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**33. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**34. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**35. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**36. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**37. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** Emergency operations plans may not be documented to the same degree as plans prepared pre-contingency.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**38. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**39. Do you agree with this requirement?**

Yes

No

**Comments:** Words should match those in Requirement 14.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**40. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **41. Do you agree with this requirement?**

Yes

No

**Comments:** Who specifies the "specified period of time"?

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **42. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**43. Do you agree with this requirement?**

Yes

No

**Comments:** Words should more closely match Requirement 16.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**44. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**45. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**47. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**48. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**49. Please list any other comments you may have in the space below.**

**Comments:**

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**STD Commenter Information (For Individual Commenters)**

Name Robert E. Reed, Transmission Subcommittee Chairman

Organization Transmissison Subcommittee

Industry Segment #

Telephone 610 666-8862

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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>Transmission Subcommittee</i>	<b>Group Chair:</b> <i>Robert E. Reed</i> <b>Chair Phone:</b> 610 666-8862 <b>Chair Email:</b> reed@pjm.com	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Dan Cooper</i>	<i>Michigan Public Power Agency</i>	
<i>Ken Donohoo</i>	<i>ERCOT</i>	
<i>Michael Gildea</i>	<i>Duke-Energy, NA</i>	
<i>Francis Halpin</i>	<i>Bonneville Power Administration</i>	
<i>Tom Mallinger</i>	<i>Midwest ISO</i>	
<i>Darrick Moe</i>	<i>Western Area Power Administration</i>	
<i>Scott Moore</i>	<i>American Electric Power</i>	
<i>Bill Slater</i>	<i>Florida Power Corporation</i>	
<i>Tom Stuchlik</i>	<i>Western Resources</i>	
<i>Joseph Stylinger</i>	<i>Southern Co.</i>	
<i>David Thorne</i>	<i>D. H. Thorne Consultants, Inc.</i>	
<i>Robert Waldele</i>	<i>New York ISO</i>	
<i>John Ahr</i>	<i>Alleghany Power Systems</i>	
<i>Susan Morris</i>	<i>SERC</i>	
<i>Ed Pfeiffer</i>	<i>Ameren</i>	
<i>Ry Palmieri</i>	<i>ECAR</i>	

**1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** 1) The TS agrees with the term "data" used, but it should be explicitly defined and quantified. 2) Consideration should be given to establishing a minimum performance or accuracy and frequency criteria for the "calculated values" and accuracy and frequency criteria

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of telemetered data values. 3) Footnotes should be repeated at least once for each requirement to remind the reader of the definition.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

Do you agree?

Yes

No

**Comments:** 1) RAs should be required to run (on-line/real-time) automated studies and off-line operational planning studies to identify and/or forecast bulk reliability concerns, but TOPs should not be subject to such requirements. The standard does not read as though manual analysis is sufficient, as it references "analysis tool" availability and then makes mention of "reliability analysis did not run" in multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement - particularly since the RAs will be required to use such tools anyway. 2) What is the scope of the term "real time"? The footnote appearing on pg.1 of Version A defines "real time" but it is still not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to "real-time" conceptually imply data, or processes, or both? 3) What is the definition and scope of "operational planning analysis"? 4) It seems the Reliability Analysis definition above is an attempt to conceal the fact that many existing entities performing Reliability Authority Functions do not have a working state estimator. The RA should explain what type of analysis tool(s), the frequency, the type of input data (off-line or real-time), etc. that is used to perform "reliability analysis". 4) Why are the analysis requirements of the RA and the TOP identical? If this is true, why do we need an RA and a TOP? 5) Why isn't there a standard for the TOP to provide telemetered data? There should be some type of performance standard established to assess the accuracy of telemetered data.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** 1) The focus is only on providing specifications for the data required. It appears to be unclear that there is no requirement to actually provide the real-time data. For example, the TOPs are required to specify and require data, but they do not appear to be required to actually PROVIDE data to RAs. 2) The certification process for the RA/TOP is not the proper means to obtain correct modeling data. It may be appropriate for real-time metering data, but much of the static data for

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system modelling and analysis is the same as the planning function. It should be consistent with those modelling requirements also. 3) The standard does not distinctly identify the areas of responsibility between the Reliability Authority and the Transmission Operator. Application of the standard to multiple parties ("Authorities") should clearly delineate the primary source of responsibility and ownership of any data, information, control and responsibility. What follows in the Standard are many requirements that duplicate the RA and TOP responsibilities -- who has the primary responsibility/requirement/authority for each? 4) The only provision in this standard is that data on new facilities must be provided seven days before it is energized. If operational planning studies have a scope of greater than seven days (possibly one year), then a seven-day notice is inadequate for these studies. There appears to be a requirement to have a standard that requires entities to provide the base data used to populate the models, in addition to the requirement to provide information on changes. 5) All assumptions should be listed in the Standard's document.

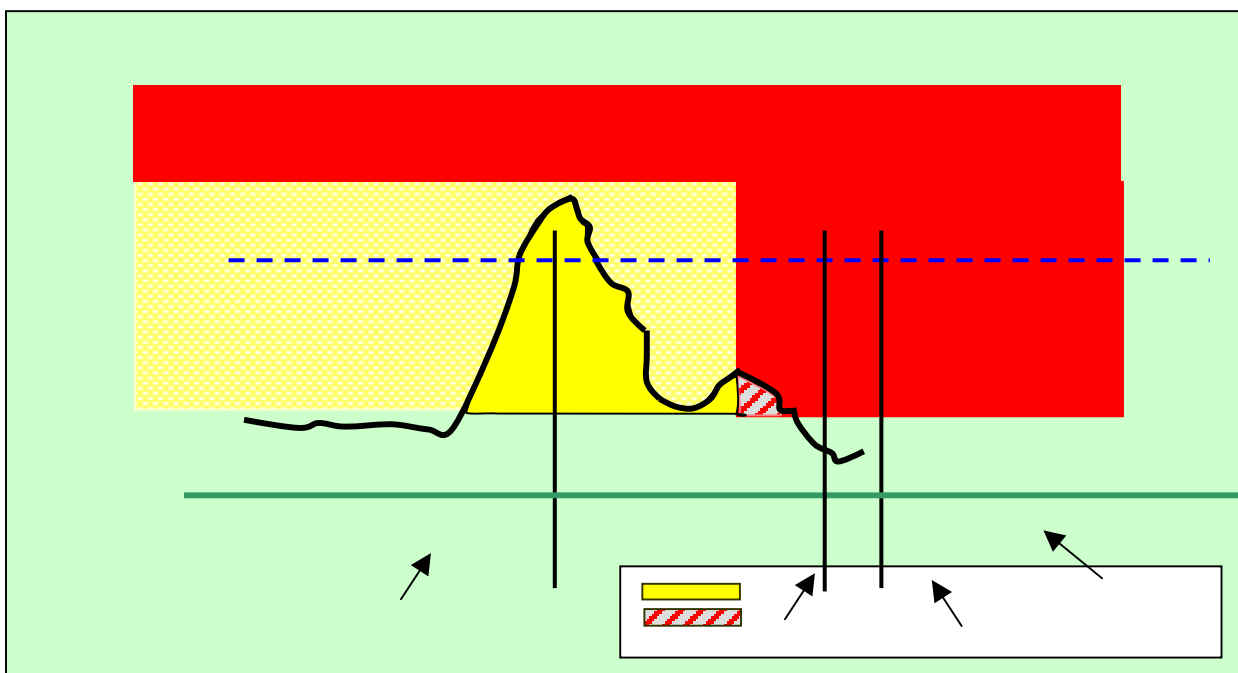
4. The draft standard uses the term "Industry Accepted Format" to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

**Comments:** ...as long as this does not lead to the creation of another "industry accepted format" or require a significant change from the way data has routinely been exchanged in the past. (typically using PSS/e or PSLF powerflow raw-data formats for representational data, etc.)



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** The TS recommends waiting until the OLDTF work is complete.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** The TS recommends waiting until the OLDTF work is complete.

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

Real Time

Self-Certification

Instability

Cascading Outages

Uncontrolled Separation

Actual telemetered data, or real-time data?

Real-Time Monitoring

Frequency of Real-Time Monitoring

System Operator Limits

If possible, please provide us with a definition for each of these terms.

System operator limits as defined is appropriate for RAs, but should not be defined as provided for TOPs. For TOPs, system operating limits should not include only those ~~limits which~~ limits, which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived, this standard does not result in any entity assuring that bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.

8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments Are you referring to Generator Owner or Generator Operator or both above?

9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.



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- RA
- BA
- Generator
- Planning Authority

**Comments** 1) What do you mean by "system analysis"? 2) What type of "system analysis" is the TOP supposed to perform? 3) Are you referring to Generator Owner or Generator Operator or both above?

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** 1) The levels of non-compliance should not be determined by the availability of telemetered data; compliance should be based on the RA's capability to monitor System Operating Limits. 2) What do you mean by "actual real-time data"? Does it mean something different than "real-time data"? For consistency, the word actual should be removed from Measure 2.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** 1) Levels 1 and 2 imply that use of substitute data is unacceptable. 2) The only important level of non-compliance listed above is level 4. 3) There seems to be no penalty for failing to identify a System Operating Limit. If an entity identifies limits and then does not monitor them, then the entity is subject to a greater penalty than an entity who fails to identify the limits. Need a process to identify SOLs and to assess system conditions, both real-time and forecast. The measures should be: a) do you have the data; b) do you have the limits; c) are you monitoring the data. 4) What does "surrogate value" mean? Levels 1 and 2 should be rewritten to consider the suggested measures listed in these comments.

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### Requirement 2:

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 12. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** 1) Whose responsibility is it to ". . . monitor (in real time) the system operating limits . . ." - the RA or the TOP? 2) Whose compliance is more significant than the other? 3) This requirement should be for the TOP to provide to the RA telemetry data and to monitor system limits and OSLs under the direction of the RA.

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 13. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** 1) Levels 1 and 2 imply that use of substitute data is unacceptable. 2) The only important level of non-compliance listed above is level 4. 3) Loss of telemetry for short periods is an unfortunate but fairly routine matter - with all that telemetry equipment in the field, it cannot be expected that none of it ever has down-time. 4) If this requirement is changed as suggested above, then there should be some type of measures defined to capture the need for a certain level of observe-ability and accuracy of the telemetry data. The TOP should also have a list of identified limits on the SCADA system that is being monitored on a periodic basis. The TOP should also have a list of "RA assigned" Operating Security Limits identified by the RA and instructions on mitigation actions to perform if the OSL is reached and/or violated.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** The TS believes the collection and processing of the data requirements could be a RA data management responsibility.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** Regardless of format, either the RA receives the data specified, or it does not. Shouldn't the RA show that the data is being used in the analysis?

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** The TS suggests measuring the TOP non-compliance at gathering and providing the data to the RA, rather than a redundant requirement for the TOP to collect the data.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** 1) Either the TOP provided the data, or it did not provide the data to the RA. 2)

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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Compliance monitoring does not belong in the requirement section of this document. It may belong in another document pertaining to compliance.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** The TS does not believe the language is clear enough. For example some members interpreted the requirement to read differently than others (as follows) - A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** In general there should be at least two levels of non-compliance identified. Why does the data have to be requested? How often should an entity request data? Should data requests be a ~~one-time~~one-time declaration in writing asking for data on new facilities? Is this requirement needed since there is not enough detail to assess non-compliance?

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### Requirement 6:

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

### Measure(s):

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

### Outcome(s) (100% Compliance):

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

### 20. Do you agree with this requirement?

Yes

No

**Comments:** The TS does not believe the language is clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data - from testing, real-time operation, engineering specifications, manufacturer's specifications, etc.

### Levels of Non-compliance for this Requirement:

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

### 21. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** The TS believes that until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined.



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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes
- No

**Comments:** The TS suggest clarification language is necessary. Same as 18, 20, 21 above.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** See 22.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** See 22.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 22.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The TS suggest clarification language is necessary. Same as 18, 20, 21, 22 above.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** 1) See 26. 2) As an example of the need for clarification language, the ". . . no less than 7 days prior . . ." was challenged by members with the following comment: In a market-based system, there are aspects of adding a new market entity that need considerably more than days-to-months lead time; for compliance a generator might be prohibited from operating commercially until all data and interconnection issues are resolved.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** 1) The TS suggests clarification language to identify the type of analysis required. Also, define the periodicity of the analysis - how often it needs to be performed. 2) From a reliability standpoint, operational planning studies are recommended to be performed to determine the adequacy during system outages. We agree with the requirement but there is insufficient detail to measure compliance

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** 1) The TS believes that number 28 needs to be addressed before non-compliance can be determined. 2) Based on the ~~time-frame~~time frames specified, the ~~levels of non-compliance implies~~levels of non-compliance imply different compliance than the requirement does. Clarification should consider: Is the requirement based on real-time operating concerns, or is it based on a short-term reliability/scheduling concern?

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** The TS believes this requirement should be eliminated - Requirement 10 (at the RA level) is adequate. See Question number 2, and the TS response.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 30.

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### **Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **32. Do you agree with this requirement?**

Yes

No

**Comments:** The TS questions the combination of "prevention" and "mitigation" in the same requirement/measure unless the language is clear to eliminate potential ambiguity. Prevention and mitigation are actions that may be undertaken in two different timeframes. Without clear language, the requirement/measure should be separated into two separate requirements to address the prevention and mitigation as separate issues.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 32 needs to be addressed and resolved before the levels of non-compliance can be determined.

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** 1) See 32. 2) How are conflicting results from an RAs analysis vs. the TOPs analysis to be resolved?

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 34 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** 1) The TS believes the requirement can be enhanced. See the following comments as examples: 2) It should be clarified that these plans need to include system intact and applicable prior-outage conditions. 3) It is only necessary to have a procedure in place that relieves the SOL violation. If a mitigation plan requires external approvals, then by whom? Will security constrained generation redispatch be an acceptable prevention or mitigation action?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 36 needs to be addressed and resolved before the levels of non-compliance can be determined..



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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** 1) The TS recommends clarification to specify these plans need to include system intact and applicable prior-outage conditions. 2) System Operating Limit should be in capital letters to be consistent with the definition on page 2. 3) There may be potential conflict between the RA and TOP in prevention/mitigation actions. 4) Is this requirement necessary?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but ~~wasn't~~ approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 38 needs to be addressed and resolved before the levels of non-compliance can be determined.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** The TS recommends delaying this requirement until the OLDTF collaborates with the SDT to define "operating limits". These new limit definitions must also go through the standards process before formal implementation.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** Question 40 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** See 40.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 42 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**The work of the OLDTF has shown that there are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions. The Standard and its compliance measurements should not dictate whether a particular RA should operate in a predictive or a responsive mode (i.e., take action in advance to prevent an overload based on predictive analysis, or take steps to mitigate an actual overload only on occurrence)**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**1) The OLDTF has definitions that need to be considered prior to finalizing this standard.**

**2) Operating limits that should be secured should include voltage collapse transfer limits in addition to equipment ratings violations.**

**3) Confidentiality of data needs to be addressed. Transmission line flows and generator outputs have commercial implications in real-time market-based systems. The Standard should recognize this concern.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** The TS believes Version B is written more clearly than Version A and is easier to follow. The TS believes that the entities that are responsible for complying with this standard will find it easier to determine what is required of them for compliance. In addition, the levels of non-compliance are spelled out more clearly; there is less room for interpretation.

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**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

1) Subtitles should be added to sectionalize the standard and a table of contents added.

2) Jim Byrd presented Functional model issues to the NERC PC/OC/MIC on March 19, 2003 in Birmingham and stated that one of the major issues with the Functional model is that the functions are perceived to be organizations. Jim stated that efforts will be made to clarify that the functions are not organizations. Since all references to functions, such as, RA, BA, PA, TOP, etc. are listed in standards documents as "entities" for convenience; for example, sentences begin: "The RA shall..." instead of "Entities responsible for RA functions shall...", then all NERC standards documents should contain a clarification statement explaining that the functions are not organizations and that all references to the functions should be interpreted as "entities responsible for --- function".

3) All assumptions should be listed in the standards document.

4) Footnotes of definitions should be repeated for each requirement write-up.

5) There should always be at least two levels of non-compliance defined.

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**STD Commenter Information (For Individual Commenters)**

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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b> <b>Chair Phone:</b> <b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
Name	Company	Industry Segment #

**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments: Standard should allow requesting of whatever data is needed at any time to run operational studies.

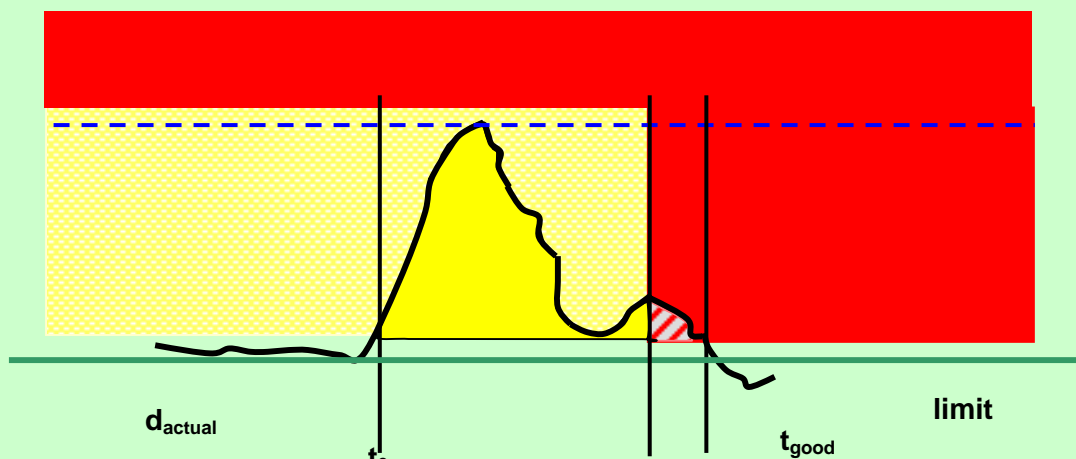
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

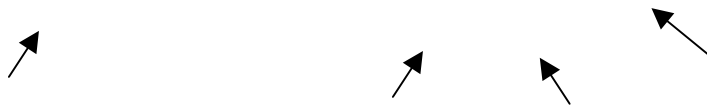
Comments: An “Industry Accepted Format” does not exist





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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

**Yes**

**No**

**Comments:**

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

**Yes**

**No**

**Comments:**

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

If possible, please provide us with a definition for each of these terms.

8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments Generator Owner or Operator should provide the unit characteristics and the real time data

9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments Generator Owner or Operator should provide the unit characteristics and the real time data

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Levels 1 & 2. The RA has no control as to availability of telemetered data. This responsibility should rest with the providing entity. The RA should monitor the data, be able to monitor the availability of telemetered data and be able to measure availability of data.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **16. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### **17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** The entity who owned the information should provide it to who needs it. The RA may be constrained due to confidentiality agreements from passing the data on to entities other than another RA.

The RA should be able to request data at any time, not just prior to energization of new facilities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** This requirement should be for any data request, not just for new or revised facilities.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** Should pertain to any facilities at any time with the timeframe defined by the RA according to its needs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Should pertain to all facilities



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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** This requirement should be for any data request, not just for new or revised facilities. Should pertain to all facilities. The timeframe should be specified by the RA in accordance with its own needs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Should pertain to all facilities

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement should be for any data request, not just for new or revised facilities. Time frame to be specified by the RA according to its own needs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Should pertain to all facilities

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The time to provide data should be specified by the RA since everyone has different time requirement to make EMS & model changes. Should pertain to all facilities, not just new facilities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Should pertain to all facilities

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** The RA should perform reliability analyses on the current operating system only to determine if the system is operating in a secure mode. This means running N-1, N-2 or credible contingency studies.

The requirement should also include running an analysis program to mesh with the Measures and Outcome(s) requirement to run a reliability analysis program

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Compliance levels should measure the recognition that there was a need to perform analysis, and whether the analysis was or wasn't done.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** The RA should direct rather than take action.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Levels of non-compliance should measure whether or not the RA identified a reliability problem, were actions (correct or incorrect) taken, and did a reportable violation occur

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** The requirement does not require an approved mitigation plan. Who is responsible for approving the mitigation plan?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**



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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** TOP shall provide data as specified.

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

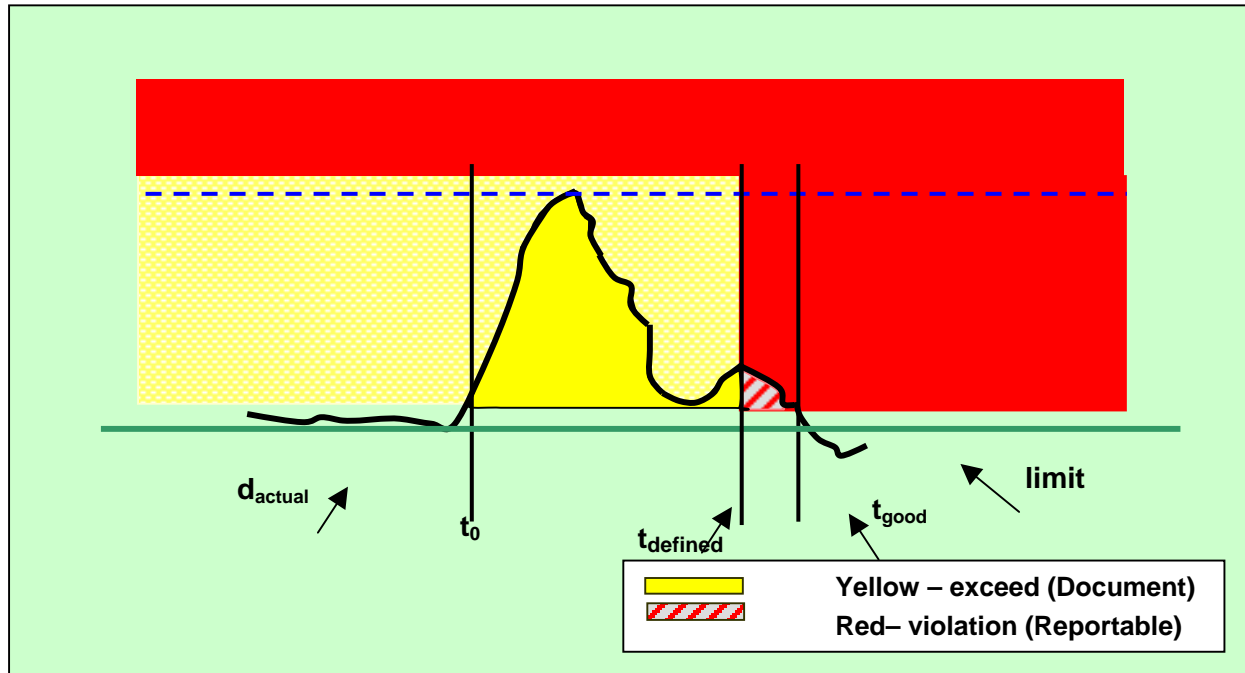
**Do you agree?**

**Yes**

**No**

**Comments:**

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments: Provided it is for a facility that is covered by the purpose of this standard. That is, if it is violating an operating limit established to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

Comments



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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**



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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Sanctions should be applied only if a regulatory body governing the entity in non-compliance endorses the sanctions table.

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Lee Xanthakos
Organization	SCE&G
Industry Segment #	1
Telephone	803-217-6058
E-mail	pxanthakos@scana.com

- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial Regulatory or other Govt. Entities



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Yes

No

**Comments:** I agree that the term should include both manual and automated process, however the standard did not read that way to me. Perhaps the drafting team should better clarify their intent in the standard

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

**Comments:** Assumptions should be avoided, and drafting team should better clarify their intent in the document.

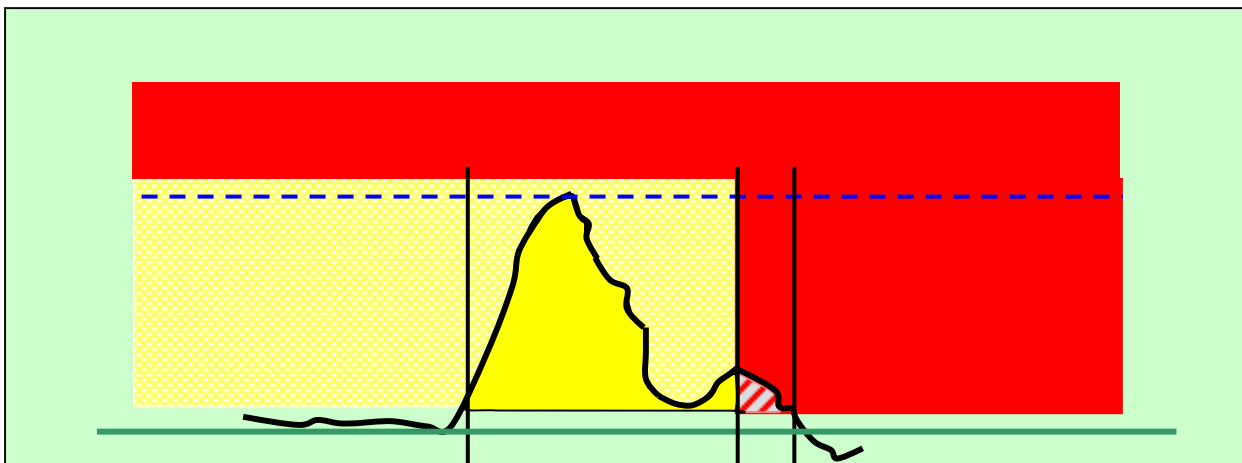
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

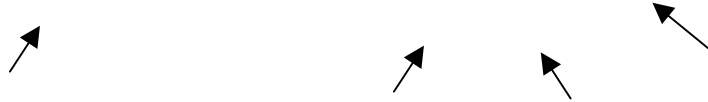
No

**Comments:**



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Levels of non-compliance should focus on what the RA does with the data not if it gets it or not.



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### Requirement 2:

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 12. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** I agree with requirements, but I do not agree that it written exactly the same as the RAs. As a matter of fact, my opinion of the entire draft is that a distinction is made between the requiremnt of an RA and a TOP. Why have two entities required doing the same thing?

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 13. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Levels of non-compliance should focus on what the TOP does with the data not if it gets it or not.

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### **Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### **Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### **14. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### **15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There is not compliance level measuring what the RA actually does with the

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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data. Also, the RA should only be measured on things they can affect. For example, would it be the RA's fault if on of its TOPs submitted data that was technically inaccurate or incomplete?

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

Comments:

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

Comments: There is not compliance level measuring what the TOP actually does with the data. Also, the TOPs should only be measured on things they can affect. For example, would it

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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be the TOP's fault if on of its BAs submitted data that was technically inaccurate or incomplete?

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** I agree with the requirement, but I question the value of making a hard 7-day rule. Why not 14 days or 21 days???

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Seems like there should be more than one level of non-compliance. What if the data was incomplete for example? Shouldn't merit some non-compliance penalty?

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** See comments for Requirement 5

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments for requirement 5

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** See comments for requirement 5

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments for requirement 5

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** See comments for requirement 5

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments for requirement 5



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** See comments for requirement 5

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments for requirement 5

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** See comment for question 12.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** We do not agree with this requirement. Furthermore we do not agree that NERC has the authority to force such a requirement onto the RAs. As written, the requirement essentially bestows functional control to the RA. This is something the South Carolina PSC has expressly ruled is the responsibility of the TSP and no one else. Actual and functional control of the transmission system is the responsibility of SCE&G's transmission department. This responsibility can not and will not be transferred to any other entity without expressed approval of the Public Service Commission. This approval has not been given nor is it expected to be given, regardless of SCE&G's desires

We recommend that drafting team should instead write a standard that requires the RA to notify the TSP of a imminent situation and provide assistance, if requested, so the TSP can implement their own mitigation plans.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

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**Comments:** NERC does not have the authority to require RAs to take action on TSP equipment for which they are not allowed to have functional control

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** See comments for questions 32. State laws may prohibit RAs from taking action on a TOPs system

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be some level of compliance for how well an approved plan was followed.



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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** Why would the TOP do this if the RA is already doing it in Requirement 16?  
There is not need for the duplication.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**



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1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?

Yes

No

Comments:

2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.

Do you agree?

Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this "base data" that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

4. The draft standard uses the term "Industry Accepted Format" to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

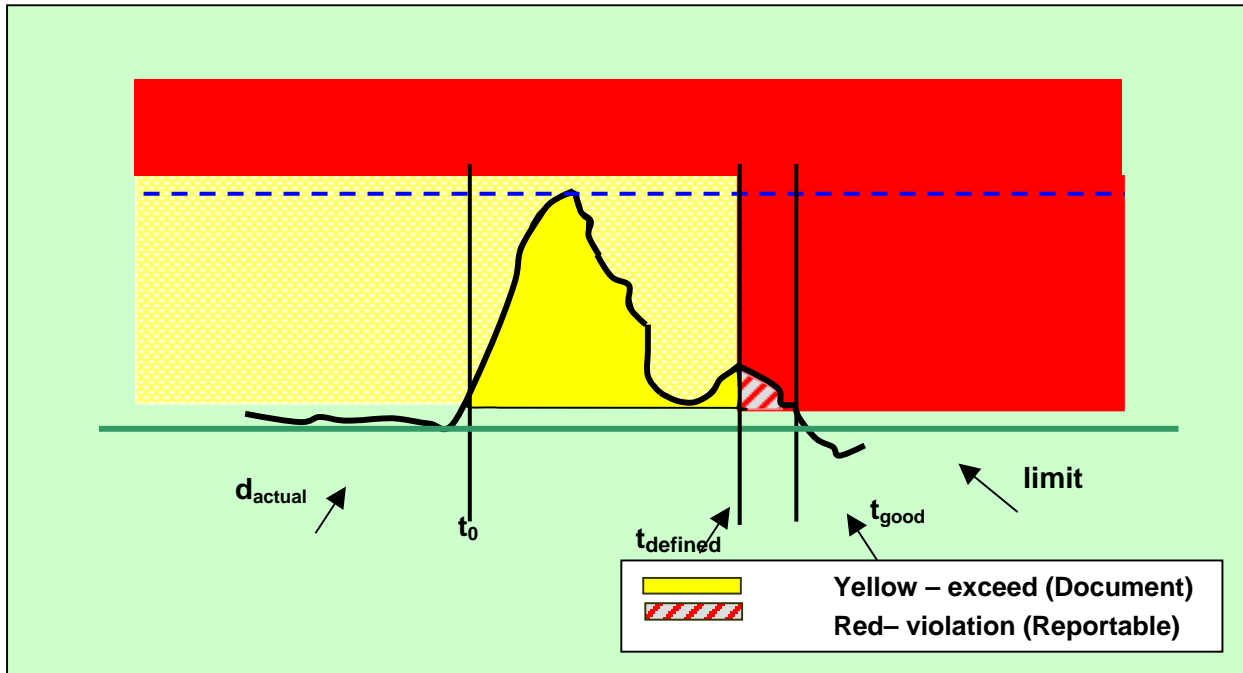
No

Comments: The definition could lead some to believe that there is a pre-defined format somewhere. A more acceptable phrase would be "mutually agreeable format". That way if a new

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format were to arise that the RA wants to use and the data suppliers are willing to use, then NERC should not care what format is used.

As long as the definition recognizes the agreement between the consenting parties to mean 'Industry accepted' then there is no issue.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

- Yes  
 No

**Comments:** The idea of ‘documenting’ near-misses and not treating them as non-compliance is a good one. It will ensure that the industry can access such information if needed (for example if there is a question of too many near misses).

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

- Yes  
 No

**Comments:**

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

If possible, please provide us with a definition for each of these terms.

8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

BA

TOP

Generator

Planning Authority

**Comments** Generator Operator is the responsible party.

9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

RA

BA

Generator

Planning Authority

**Comments** In the framework of the Functional Model, the TOP in its role as TOP does not have the responsibility for doing system analysis. To the extent that the TOP does local analysis that information must come from the RA (unless the TOP has its own agreements to access that data.)

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** The measure has to do with monitoring while the non-compliance has to do with data quality. Monitoring compliance is difficult – how does one say that the system is not being monitored correctly. However, the measures focus on whether or not the monitor is using good data.



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments to #11

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

Comments:

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

No

Comments: The requirements for computing limits comes from the SAR on Facility Ratings et al. This Standard focuses on response and on Model maintenance (in real-time environment)

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** See response to # 9

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** This Matrix is for data handling not for operations.

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** By allowing the RA to define the data required for its needs properly places the responsibility on the RA and avoids the problem of developing a standard that includes identifying specific data.

The need to exclude the TOP is still noted.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The Functional Model only assigns the BA responsibility for Balancing not for facility data.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** IA is not involved with facility data – (only Interchange Schedules)

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** As noted above the TOP is not responsible for system analysis (which is the only way it could identify an OSL). Therefore in the Reliability Standards process that responsibility still lies with the RA. The RA can provide the data to the TOP as needed or as agreed to (e.g. they can agree that the TOP gets the data directly)

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **32. Do you agree with this requirement?**

Yes

No

**Comments:** As written this requirement mandates the RA to take action (while at the same time leaving the procedures, services and processes up to the individual RAs).

The requirement also allows preventive and well as corrective actions to be taken.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There is a definite need here to recognize that NO ACTION “can be” a definitive activity (ergo not to be held as a non-compliance indicator)

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** This is an RA responsibility. Of course the RA may assign that function to the TOP (but in the end the RA is still the responsible party)

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Again, this is an RA responsibility.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

Comments:

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes

No

Comments: This requirement is a documentation requirement not a filing requirement (i.e. Level 1 is inappropriate)

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** The TOP may do this for the RA, but it need not be a TOP function.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**STD Commenter Information (For Individual Commenters)**

Name	Richard J. Kafka
Organization	Potomac Electric Power Company
Industry Segment #	1
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E-mail	rjkafka@pepco.com

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities



**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

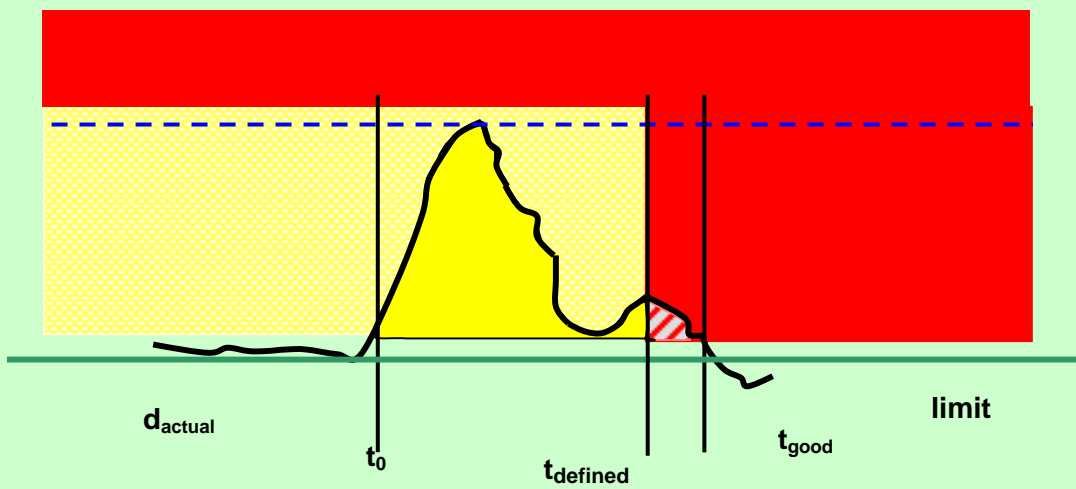
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

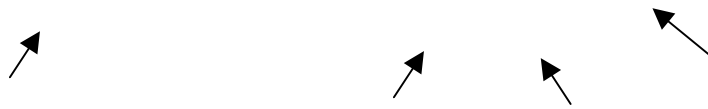
No

Comments:



**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

**Yes**

**No**

**Comments:**

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

**Yes**

**No**

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments**

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** This is a RA responsibility, although TOP will physically monitor actual conditions.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** In many cases, state estimator data are an adequate replacement for telemetered data.



**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** RA builds and maintains models

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** BA is not responsible for facility data

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** IA is responsible for interchange information, not facility data

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** This is an RA responsibility

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** This is an RA responsibility

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** This is an RA responsibility

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

## Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** This is self monitoring by the TOP

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**



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**STD Commenter Information (For Individual Commenters)**

Name	Tom Petrich
Organization	Pacific Gas and Electric Company
Industry Segment #	1
Telephone	(415) 973-6491
E-mail	tcp3@pge.com

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

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STD Commenter Information (For Groups Submitting Group Comments)		
Name of Group:		Group Chair:
		Chair Phone:
		Chair Email:
List of Group Participants that Support These Comments:		
Name	Company	Industry Segment #
<i>Chifong Thomas</i>	<i>Pacific Gas and Electric Co.</i>	<i>1</i>
<i>Ben Morris</i>	<i>Pacific Gas and Electric Co.</i>	<i>1</i>
<i>Bob Stuart</i>	<i>Pacific Gas and Electric Co.</i>	<i>1</i>
<i>Joe Seabrook</i>	<i>Puget Sound Energy, Inc.</i>	<i>1</i>

**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes  
 No

**Comments:** There are other references to “actual” data. (For example, Requirement 1 states “The RA shall monitor real time system operating limits and compare these against actual data associated with those limits”.) If “actual” data is the same as “real” data, then we suggest using the term “actual” data throughout the standard to avoid confusion in the future.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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operational planning analyses.

Do you agree?

Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

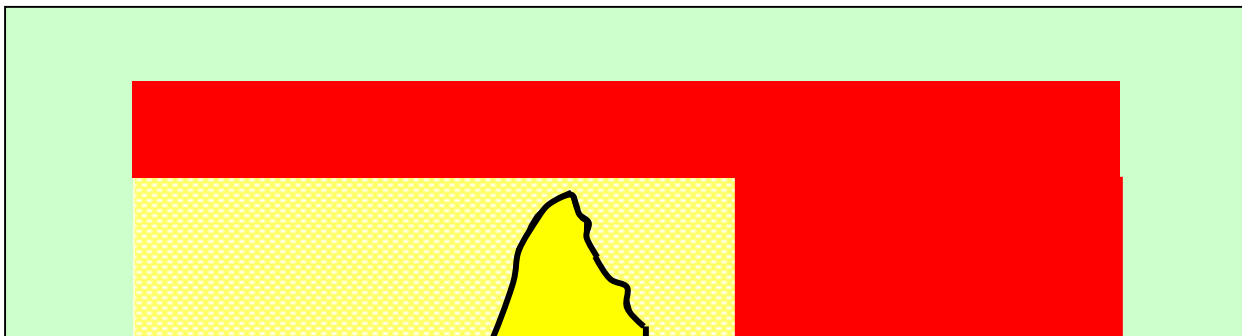
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

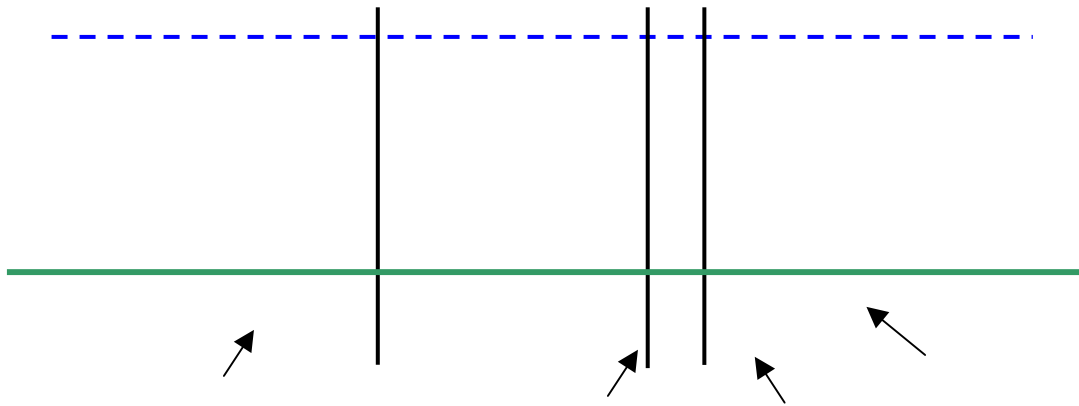
No

**Comments:** Since there are numerous formats that can be qualified as “Industry Accepted Formats”, the entities performing the related RA, BA, TOP, IA, TOW, Generator functions should agree on a set of common formats to be used for data exchange to avoid unnecessary duplication of work.



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** Some clarification is needed. The System Operating Limit itself can be defined with a magnitude and a time limit, so the magnitude limit can be a step function. e.g., the allowable loading magnitude “X” for a 1-hour limit would be higher than the allowable loading “Y” for a 4-hour limit, so there should be a violation only if the yellow portion is above “X” for more than 1 hour, or above “Y” for more than 4 hours.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** See comment in response to Question #5. Also, it is not clear what is the basis of the “red zone” above the “yellow” zone in the time period  $t_0$  -  $t_{\text{defined}}$

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments** It would also be acceptable for the generator to provide identical data concurrently to the TOP and the RA. Our recommendation is to minimize any possibility of the TOP and the RA having conflicting data.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments**

## STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

Please use Version A of the draft standard to answer these questions.

### Requirement 1:

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 10. Do you agree with this requirement and its associated performance/outcome and measure/s?

- Yes  
 No

**Comments:** The “requirement”, “measures(s)” and “outcome(s)” should state that the RA monitor *and take corrective action to ensure the system is operated within the system operating limits*. The RA System operating limits can also be established to avoid violating thermal facility limits affecting safety and reliability. Specifying that the system operating limits as “identified to prevent instability, uncontrolled separation or cascading outages” may be interpreted to exclude operating within limits based on other factors such as thermal overload.

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 11. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** Non-compliance Levels 1 and 2 need to include a lower limit before the non-compliance level would be in effect. For example, as written, the RA function would be in Level 1 violation if it misses 1 second of actual telemetered data. This does not seem reasonable. We suggest adding the phrase “and no proper corrective action was taken” to the end of both Levels 1 and 2. Thus:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours *and no proper corrective action was taken*
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours *and no proper corrective action was taken*

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** System operating limits can also be established to avoid violating thermal facility limits. Specifying that the system operating limits as “identified to prevent instability, uncontrolled separation or cascading outages” may be interpreted to exclude operating within limits based on other factors such as thermal overload.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Non-compliance Levels 1 and 2 need to include a lower limit before the non-compliance level would be in effect. For example, as written, the TOP function would be in Level 1 violation if it misses 1 second of actual telemetered data. This does not seem reasonable. We suggest adding the phrase “and no proper corrective action was taken” to the end of both Levels 1 and 2. Thus:

3. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours and no proper corrective action was taken
4. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours and no proper corrective action was taken

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** There needs to be agreement among the various functions on the exact acceptable format and timing for data transfer to void unnecessary duplication of work. The generator function should provide data to the RA through the TOP, instead of to both the RA and the TOP, to avoid unintended inconsistency. Please add "the format and timing for data transfer should be coordinated and agreed to by the impacted parties".

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses



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Yes

No

**Comments:** Non-compliance Level 1 states “data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete)”. It is not clear why the RA should be held in non-compliance for “technically inaccurate or incomplete” data submitted by other functions. We suggest deleting “or some data technically inaccurate or incomplete”.

## STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** There needs to be agreement among the various functions on the exact acceptable format and timing for data transfer to avoid unnecessary duplication of work. The generator function should provide data to the RA through the TOP, instead of to both the RA and the TOP, to avoid unintended inconsistency. Please add "the format and timing for data transfer should be coordinated and agreed to by the impacted parties".

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**No**

1. **Comments:** : Non-compliance Level 1 states “data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete)”. It is not clear why the TOP should be held in non-compliance for “technically inaccurate or incomplete” data submitted by other functions. We suggest deleting “or some data technically inaccurate or incomplete”.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** “Data” is open-ended. If the “data” refer to system parameters, then they would have to be calculated data and not “actual” or “state estimated”. If the requirement is for test data, some of them may not be available until after energization. We suggest adding qualifications to limit the universe of “data” required.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** We are not sure what kind of data the BA function can provide before energization. An example would be helpful.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** We are not sure what kind of data the IA function can provide before energization. An example would be helpful.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 10:

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### Measure(s):

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### Outcome(s) (100% Compliance):

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 28. Do you agree with this requirement?

Yes

No

**Comments:** Please modify the sentence to read:

“The RA shall run reliability analysis program(s) and ~~the program(s)~~ shall identify *potential* problems, *if any*, that could cause *generation and transmission facility overloads*, instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.” We should not lose sight of the responsibility of the RA to take proper actions to correct the problems that it has identified.

### Levels of Non-compliance for this Requirement:

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

### 29. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** These levels of non-compliance are not clear to us. Who is “requesting” the reliability analysis and what is the basis? How does this relate to the actual operation of the system? In WECC, we require the system be adjusted within 20 minutes to reduce flows on stability limited paths to be within their operational limits for the system conditions. We would expect the reliability analysis be requested and performed well in advance so the RA is prepared to monitor and take corrective actions.



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### Requirement 11:

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### Measure(s):

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### Outcome(s) (100% Compliance):

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### 30. Do you agree with this requirement?

Yes

No

**Comments:** Please modify the sentence to read:

"The TOP shall run reliability analysis program(s) and ~~the program(s)~~ shall identify *potential* problems, *if any*, that could cause *generation and transmission facility overloads*, instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system." We should not lose sight of the responsibility of the TOP to take proper actions to correct the problems that it has identified.

### Levels of Non-compliance for this Requirement:

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

### 31. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** : These levels of non-compliance are not clear to us. Who is "requesting" the reliability analysis and what is the basis? How does this relate to the actual operation of the system? In WECC, we require the system be adjusted within 20 minutes to reduce flows on stability limited paths to be within their operational limits for the system conditions. We would expect the reliability analysis be requested and performed well in advance so the RA is prepared to monitor and take corrective actions.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Non-compliance Levels 2 and 3 do not seem reasonable. For example, during emergencies, the correct action may be “no action”. In any case, If no limit violation has occurred, what is the basis of the “non-compliance”. They should be changed to “not applicable”.

## STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** The TOP needs to take necessary actions to prevent equipment overloads as well.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Non-compliance Levels 2 and 3 do not seem reasonable. For example, during emergencies, the correct action may be “no action”. In any case, If no limit violation occurred, what is the basis of the “non-compliance”. They should be changed to “not applicable”.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** In the sentence, "The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits." We may want to replace the word "approved" with "finalized". If not, we suggest identifying the approving party. Otherwise, it could introduce confusion in implementation.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We need to specify the party that would do the approving.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** In the sentence, "The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits." We may want to replace the word "approved" with "finalized". If not, we suggest identifying the approving party. Otherwise, it could introduce confusion in implementation.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We need to specify the party that would do the approving.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** The 72 hours time requirement to file a complete report may not provide allowance for emergencies.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** The requirement for producing supporting document and corresponding unlogged violation seems too prescriptive and do not make allowance for emergencies, when keeping the system together should be more important than filling out forms.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**



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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Gerald Rheault
Organization	Manitoba Hydro
Industry Segment #	1,3,5,6
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

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1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?

Yes

No

Comments:

2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.

Do you agree?

Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this "base data" that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

**Comments:** Manitoba Hydro agrees that this Standard has to address the requirement for updating the data in a timely fashion. However we believe that the requirement for "base data" is not and should not be addressed in the certification process. The requirement for the "base data" should be included in this Standard. The process to be defined by the RA and TOP to obtain data for reliability analysis purposes should address both "base data" and changes to this data to ensure accuracy of the models used for reliability analysis.

4. The draft standard uses the term "Industry Accepted Format" to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

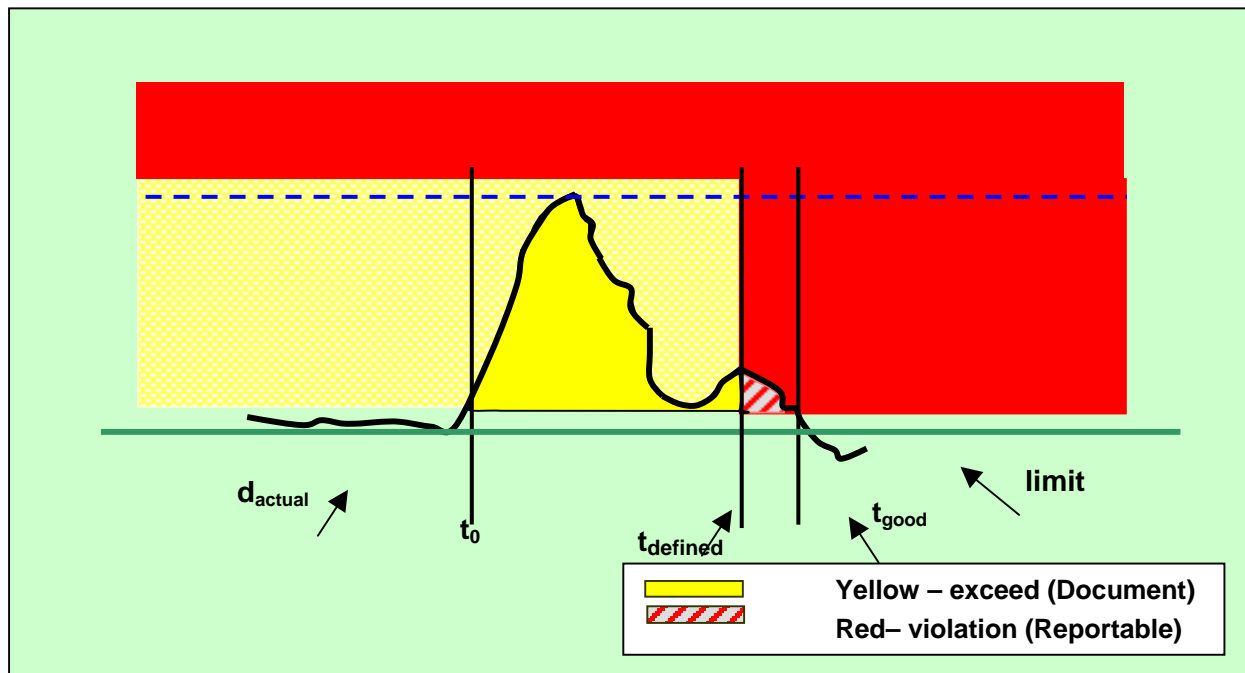
Do you agree?

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Yes

No

**Comments:** Manitoba Hydro believes that as much as possible the appropriate Standard should specify what the acceptable format should be. For parameters where this is not possible the term “Industry Accepted Format” should be acceptable.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** Based on the above graph the terminology used is correct. However Manitoba Hydro believes that the concept of operation related to operating limits and reportable violations should be defined by the Standard Drafting Team for Standard “Determine Facility Ratings, System Operating Limits, and Transfer Capabilities”. The concepts that they develop should then be integrated in this Standard

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

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**Yes**

**No**

**Comments:** see comment for #5.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

**Comments:** Manitoba Hydro believes that the generator owner must provide this data since as owner of the asset he is responsible for protecting that asset and establishing ratings consistent with the risk level he is willing to assume.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

**Comments:** see comment in #8

## STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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*Please use Version A of the draft standard to answer these questions.*

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Manitoba Hydro believes that the performance requirement objective is correct; however there are instances where real time data is not readily available and may have to be inferred or synthesized from other measurements. The measures section above should be modified to reflect this reality.

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Manitoba Hydro agrees with using a set of levels to define non-compliance. However the set of limits defined here may not be appropriate and should be related to the risk on the system. In the event of loss of data, perhaps a lower set of limits should be applied till the regular data can be re-established.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** see comment in #10.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** see comment in #11.

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** Manitoba Hydro agrees with the requirement to provide data to the RA. The accuracy of this data is not referenced here. Generally data should be accurate. There are all sorts of reasons why it may not be accurate and a process should be in place to keep improving the data and having a means to identify bad or questionable data.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses



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**No**

**Comments:** Manitoba Hydro believes that the industry accepted format should be more clearly defined in some Standard to ensure minimum acceptable level of quality.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** same comment as in #14 but for TOP.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** same comment as in #15.

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Manitoba Hydro questions the 7 day period specified. Some processes would require significantly more lead time than that while some require less; how was the 7 day time chosen. The issue is one of supplying data on a timely basis. Isn't that covered by another requirement.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** see comment for #18.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** see comment in #18.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** see comment in #18

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** see comment in #18.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** Manitoba Hydro agrees with the use of online reliability analysis programs to identify possible instability, uncontrolled separation or cascading outages that could adversely impact the reliability of the bulk transmission system. The analysis performed will identify the possibility of problems occurring but will not determine the secure operating limit for the system. Steps should then be taken by the RA to put the system in an operating mode to ensure that Operating Security Limits will not be violated.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Manitoba Hydro believes that the times referenced are artificial and don't relate to system need and risk. Time frames should be determined based on system need and the relative risk posed to the system of not having these tools operational.



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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** see comment for #28

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** see comment for #29.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The issue should not be one of violation not occurring because the contingencies considered didn't happen. The issue should be one of risk and recognition of the impacts of the contingencies such that operation must be to limits based on these contingencies.

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** Manitoba Hydro believes that TOP actions should be subject to RA oversight and approval for any actions that are identified as possibly adversely impacting the reliability of the bulk transmission system.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** see comment for #33

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** Manitoba Hydro is concerned about the amount of data that may be required to be collected for this requirement. Perhaps there needs to be some sampling process or investigation only when multiple violations occur or when a system disturbance results

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** see comment for #40

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:** Manitoba Hydro believes that the requirements for monitoring system operating limits in real time in a thermally constrained network and for a stability constrained network are significantly different. The time limitations in a stability constrained network does not allow the RA or TOP to use online reliability analysis tools in the same way as they can be used in a thermally constrained tight network. The RA in a stability constrained network will be required to operate to predefined operating limits which have been determined from extensive operational planning analysis. The RA in a thermally constrained network can operate to real time defined limits because of the much slower system reaction time.

**If yes, please identify what you feel should be added.**

**Requirement 1 and Requirement 2 must be worded in a manner to ensure that both the RA and TOP for thermally constrained and for stability constrained networks can meet the requirements of the Standard.**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**





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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

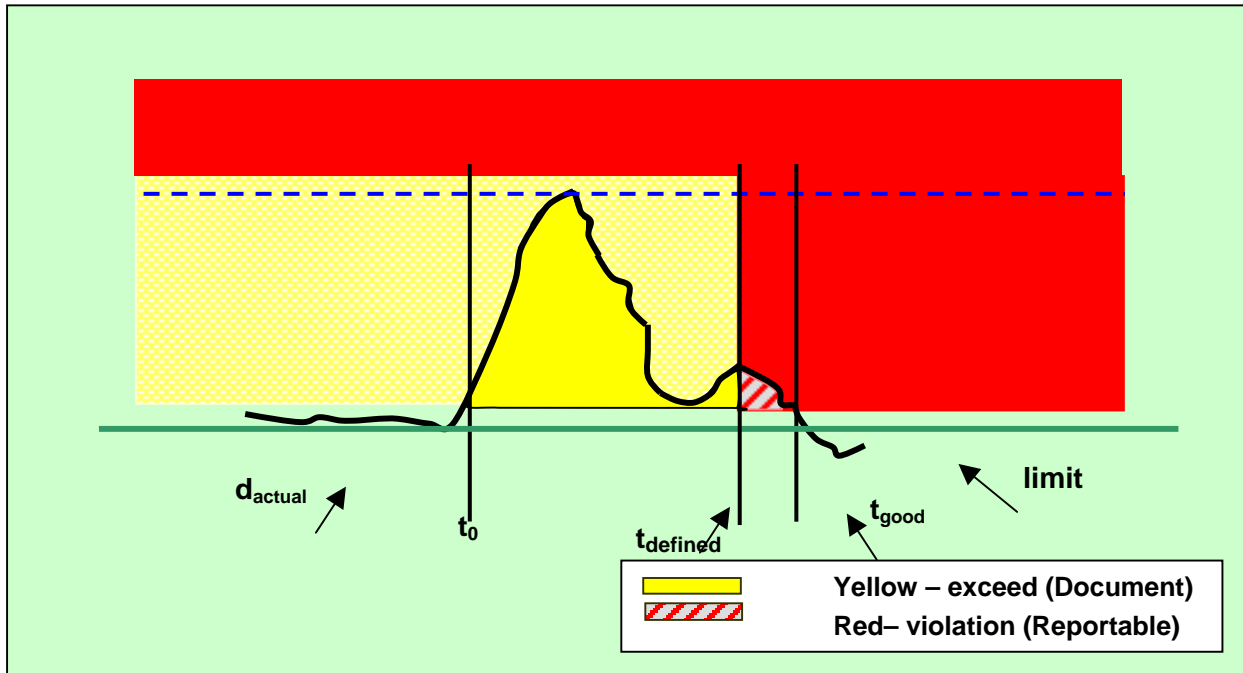
**Do you agree?**

**Yes**

**No**

**Comments:**

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

- Yes
- No

**Comments:** The CAISO agrees with this requirement as long as the term "Documentable" refers to the entities' internal process of documentation.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

- Yes
- No

**Comments:**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Problem versus violation**

**If possible, please provide us with a definition for each of these terms.**

Problem = exceed limits but not for defined time, there for it is not a reportable event.

Violation = exceed limit for defined time, there for it is a reportable event.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** Wording in the second paragraph of the Requirements should be changed to read "The RA shall specify when the data is to be supplied"

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

No

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.



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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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Standard.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** The text of the Requirement should be changed to read "The RA shall specify data to be provided"

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed seperately from the Standards themselves. There for this section should be removed from the Standard.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed seperately from the Standards themselves. There for this section should be removed from the Standard.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed seperately from the Standards themselves. There for this section should be removed from the Standard.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed seperately from the Standards themselves. There for this section should be removed from the Standard.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** The types of reports that would be needed to identify "problems that could cause instability, uncontrolled separation or cascading outages.." are not done quickly, making it difficult to perform them in real-time. The wording of the Requirement sounds like these would be required in real-time, and it is not possible for a RA to complete them in this time-frame.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** See response to question #28.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed seperately from the Standards themselves. There for this section should be removed from the Standard.



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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** See response to #28

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed seperately from the Standards themselves. There for this section should be removed from the Standard.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** See response to question #28.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** IF the Requirement and Outcome are modified so that where reference is made to a "mitigation plan", it says "mitigation plan/procedure".

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** See response to question #36.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed seperately from the Standards themselves. There for this section should be removed from the Standard.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** The Requirement should be amended to add the following on the end: "..and action taken to return the system to normal status".

Also, although the CAISO is recommending removal of the compliance portions, it would like to take the opportunity to suggest a more practical and reasonable time frame for the requirement on filing a report in the event of a violation. The CIASO would like to suggest that in place of "72 hours" that the body that establishes the compliance requirements consider changing the requirement to "5 business days".

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

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**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. There for this section should be removed from the Standard.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:** The usage and definition of the term "violation" varies between the different entities.

**If yes, please identify what you feel should be added.**

**See definitions offered in comments on question #7.**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** See comment below - question #47.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** The CAISO would like to suggest a third option for the organization of the Standard, dividing the requirements up by function, such as Reliability Authority, Transmission Operator, etc., rather than by task.



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<b>STD Commenter Information (For Individual Commenters)</b>	
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Bill Reinke</i>	<i>SERC</i>	<i>2</i>
<i>Dick Worthen</i>	<i>SERC</i>	<i>2</i>
<i>Sam Stryker</i>	<i>Fayetteville PWC</i>	<i>3, 4, &amp; 5</i>
<i>John Troha</i>	<i>SERC</i>	<i>2</i>
<i>George Bartlett</i>	<i>Entergy Transmission</i>	<i>1</i>
<i>Ed Davis</i>	<i>Entergy Transmission</i>	<i>1</i>
<i>Tim Ponseti</i>	<i>Entergy Transmission</i>	<i>1</i>
<i>Jim Case</i>	<i>Entergy Transmission</i>	<i>2</i>
<i>Lee Xanthakos</i>	<i>SCE&amp;G System Control</i>	<i>1</i>
<i>John Stickley</i>	<i>AECI</i>	<i>1</i>

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**1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** The term "data" should be explicitly defined and quantified. Consideration should be given to establishing a minimum performance or accuracy and frequency criteria for the "calculated values" and accuracy and frequency criteria of telemetered data values. Footnotes should be repeated at least once for each requirement to remind the reader of the definition.

**2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

1) RAs should be required to run (on-line/real-time) automated studies and off-line operational planning studies to identify and/or forecast bulk reliability concerns, but TOPs should not be subject to such requirements. The standard does not read as though manual analysis is sufficient, as it references "analysis tool" availability and then makes mention of "reliability analysis did not run" in multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement - particularly since the RAs will be required to use such tools anyway.

2) What is the scope of the term "real time"? The footnote appearing on pg.1 of Version A defines "real time" but it is still not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to "real-time" conceptually imply data, or processes, or both?

3) What is the definition and scope of "operational planning analysis"?

4) It seems the Reliability Analysis definition above is an attempt to conceal the fact that many existing entities performing Reliability Authority Functions do not have a working state estimator. The RA should explain what type of analysis tool(s), the frequency, the type of input data (off-line or real-time), etc. that is used to perform "reliability analysis".

5) Why are the analysis requirements of the RA and the TOP identical? If this is true, why do we need an RA and a TOP?

6) Why isn't there a standard for the TOP to provide telemetered data? There should be

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some type of performance standard established to assess the accuracy of telemetered data.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:**

1) The focus is only on providing specifications for the data required. It appears to be unclear that there is no requirement to actually provide the real-time data. For example, the TOPs are required to specify and require data, but they do not appear to be required to actually PROVIDE data to RAs.

2) The certification process for the RA/TOP is not the proper means to obtain correct modeling data. It may be appropriate for real-time metering data, but much of the static data for system modelling and analysis is the same as the planning function. It should be consistent with those modelling requirements also.

3) The standard does not distinctly identify the areas of responsibility between the Reliability Authority and the Transmission Operator. Application of the standard to multiple parties ("Authorities") should clearly delineate the primary source of responsibility and ownership of any data, information, control and responsibility. What follows in the Standard are many requirements that duplicate the RA and TOP responsibilities -- who has the primary responsibility/requirement/authority for each?

4) The only provision in this standard is that data on new facilities must be provided seven days before it is energized. If operational planning studies have a scope of greater than seven days (possibly one year), then a seven-day notice is inadequate for these studies. There appears to be a requirement to have a standard that requires entities to provide the base data used to populate the models, in addition to the requirement to provide information on changes.

5) All assumptions should be listed in the Standard's document.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

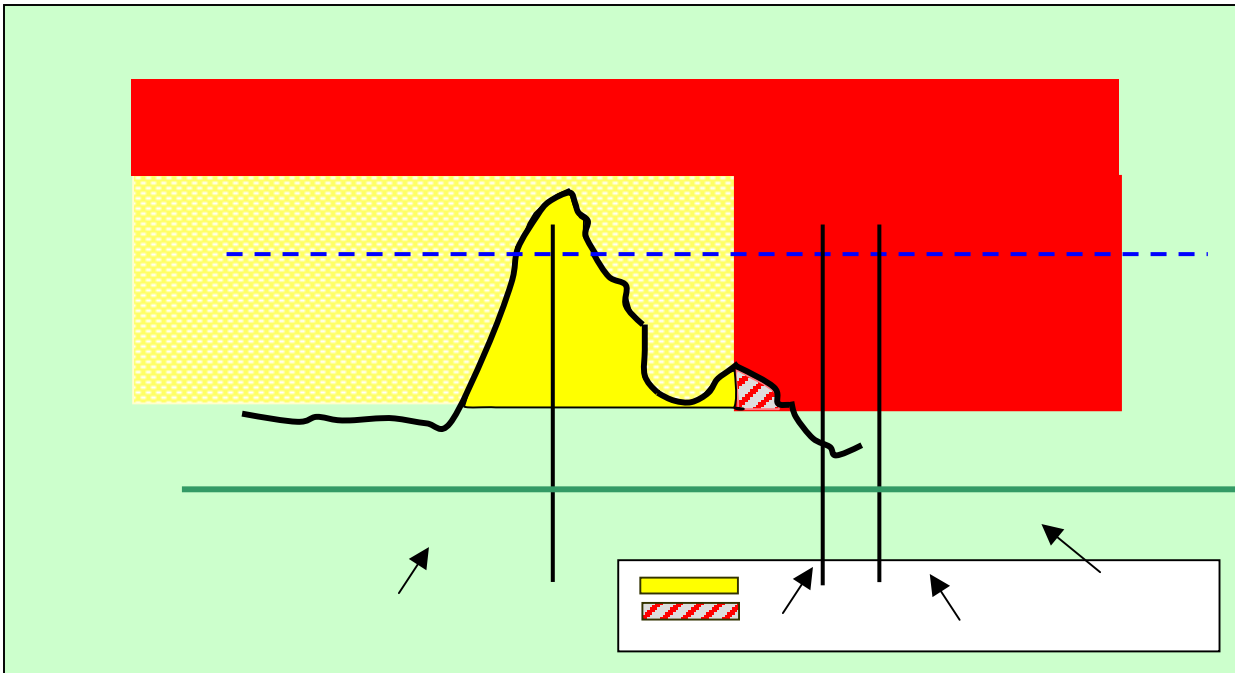
**Do you agree?**

Yes

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No

**Comments:** ...as long as this does not lead to the creation of another "industry accepted format" or require a significant change from the way data has routinely been exchanged in the past. (typically using PSS/e or PSLF powerflow raw-data formats for representational data, etc.)



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** Wait until the OLDTF work is complete.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** Wait until the OLDTF work is complete.

**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Real Time**

**Self-Certification**

**Instability**

**Cascading Outages**

**Uncontrolled Separation**

**Actual telemetered data, or real-time data?**

Real-Time Monitoring

Frequency of Real-Time Monitoring

System Operator Limits

**If possible, please provide us with a definition for each of these terms.**

System operator limits as defined is appropriate for RAs, but should not be defined as provided for TOPs. For TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived, this standard does not result in any entity assuring that bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments** Are you referring to Generator Owner or Generator Operator or both above?

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

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RA

BA

Generator

Planning Authority

**Comments 1) What do you mean by "system analysis"?**

**2) What type of "system analysis" is the TOP supposed to perform?**

**3) Are you referring to Generator Owner or Generator Operator or both above?**

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Please use Version A of the draft standard to answer these questions.

### Requirement 1:

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 10. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** 1) The levels of non-compliance should not be determined by the availability of telemetered data; compliance should be based on the RA's capability to monitor System Operating Limits.

2) What do you mean by "actual real-time data"? Does it mean something different than "real-time data"? For consistency, the word actual should be removed from Measure 2.

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 11. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** 1) Levels 1 and 2 imply that use of substitute data is unacceptable.

2) The only important level of non-compliance listed above is level 4.

3) There seems to be no penalty for failing to identify a System Operating Limit. If an entity identifies limits and then does not monitor them, then the entity is subject to a greater penalty than an entity who fails to identify the limits. Need a process to identify SOLs and to assess system conditions, both real-time and forecast. The measures should be: a) do you have the data; b) do you have the limits; c) are you monitoring the data.

4) What does "surrogate value" mean? Levels 1 and 2 should be rewritten to consider the

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suggested measures listed in these comments.



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### Requirement 2:

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 12. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** 1) Whose responsibility is it to ". . . monitor (in real time) the system operating limits . . ." - the RA or the TOP?

2) Whose compliance is more significant than the other?

3) This requirement should be for the TOP to provide to the RA telemetry data and to monitor system limits and OSLs under the direction of the RA.

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 13. Do you agree with these levels of non-compliance for this requirement?

Yes

No

#### Comments:

1) Levels 1 and 2 imply that use of substitute data is unacceptable.

2) The only important level of non-compliance listed above is level 4.

3) Loss of telemetry for short periods is an unfortunate but fairly routine matter - with all that telemetry equipment in the field, it cannot be expected that none of it ever has down-time.

4) If this requirement is changed as suggested above, then there should be some type of

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measures defined to capture the need for a certain level of observe-ability and accuracy of the telemetry data. The TOP should also have a list of identified limits on the SCADA system that is being monitored on a periodic basis. The TOP should also have a list of "RA assigned" Operating Security Limits identified by the RA and instructions on mitigation actions to perform if the OSL is reached and/or violated.

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** The collection and processing of the data requirements could be a RA data management responsibility. Isn't there a need to develop a requirement to show that the data is used in the analysis? Instead of evaluating the supply of data, shouldn't the focus be on monitoring and assessing transmission reliability?

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**No**

**Comments:** Regardless of format, either the RA receives the data specified, or it does not. Shouldn't the RA show that the data is being used in the analysis?

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** Suggest measuring the TOP non-compliance at gathering and providing the data to the RA, rather than a redundant requirement for the TOP to collect the data.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** 1) Either the TOP provided the data, or it did not provide the data to the RA. 2)

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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Compliance monitoring does not belong in the requirement section of this document. It may belong in another document pertaining to compliance.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** The language is not clear enough. For example some might interpret the requirement to read differently than others (as follows) - A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** In general there should be at least two levels of non-compliance identified. Why does the data have to be requested? How often should an entity request data? Should data requests be a one time declaration in writing asking for data on new facilities? Is this requirement needed since there is not enough detail to assess non-compliance?

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The language is not clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data - from testing, real-time operation, engineering specifications, manufacturer's specifications, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined. In general there should be at least two levels of non-compliance identified..

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Clarification language is necessary. Same as 18, 20, 21 above.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 22. In general there should be at least two levels of non-compliance identified.



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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** See 22.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 22. In general there should be at least two levels of non-compliance identified.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Clarification language is necessary. Same as 18, 20, 21, 22 above.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** 1) See 26. In general there should be at least two levels of non-compliance identified.

2) As an example of the need for clarification language, the ". . . no less than 7 days prior.":

In a market-based system, there are aspects of adding a new market entity that need considerably more than days-to-months lead time; for compliance a generator might be prohibited from operating commercially until all data and interconnection issues are resolved.

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes
- No

**Comments:** 1) Clarification language is needed to identify the type of analysis required. Also, define the periodicity of the analysis - how often it needs to be performed.

2) From a reliability standpoint, operational planning studies are recommended to be performed to determine the adequacy during system outages.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** 1) Number 28 needs to be addressed before non-compliance can be determined.

2) Based on the time-frames specified, the levels of non-compliance imply different compliance than the requirement does. Clarification should consider: Is the requirement based on real-time operating concerns, or is it based on a short-term reliability/scheduling concern?

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement should be eliminated - Requirement 10 (at the RA level) is adequate. See response to Question number 2.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 30.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** Should not combine the terms "prevention" and "mitigation" in the same requirement/measure unless the language is clear to eliminate potential ambiguity. Prevention and mitigation are actions that may be undertaken in two different timeframes. Without clear language, the requirement/measure should be separated into two separate requirements to address the prevention and mitigation as separate issues. This requirement and requirement 14 should be combined and rewritten to require that the RA have procedures in place that specifies actions needed to preserve reliable operation of the system.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Question 32 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** 1) See 32. 2) How are conflicting results from an RAs analysis vs. the TOPs analysis to be resolved?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 34 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** 1) The requirement can be enhanced. See the following comments as examples:

2) It should be clarified that these plans need to include system intact and applicable prior-outage conditions.

3) It is only necessary to have a procedure in place that relieves the SOL violation. If a mitigation plan requires external approvals, then by whom? Will security constrained generation redispatch be an acceptable prevention or mitigation action?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 36 needs to be addressed and resolved before the levels of non-compliance can be determined..

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** 1) Clarification is necessary to specify that these plans need to include system intact and applicable prior-outage conditions.

2) System Operating Limit should be in capital letters to be consistent with the definition on page 2.

3) There may be potential conflict between the RA and TOP in prevention/mitigation actions. Is this requirement necessary?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 38 needs to be addressed and resolved before the levels of non-compliance can be determined.



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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** Delay this requirement until the OLDTF collaborates with the SDT to define "operating limits". These new limit definitions must also go through the standards process before formal implementation.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** Question 40 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** See 40.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 42 needs to be addressed and resolved before the levels of non-compliance can be determined. In general there should be at least two levels of non-compliance identified.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

The work of the OLDTF has shown that there are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions. The Standard and its compliance measurements should not dictate whether a particular RA should operate in a predictive or a responsive mode (i.e., take action in advance to prevent an overload based on predictive analysis, or take steps to mitigate an actual overload only on occurrence)

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

**1) The OLDTF has definitions that need to be considered prior to finalizing this standard.**

**2) Operating limits that should be secured should include voltage collapse transfer limits in addition to equipment ratings violations.**

**3) Confidentiality of data needs to be addressed. Transmission line flows and generator outputs have commercial implications in real-time market-based systems. The Standard should recognize this concern.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** Version B is written more clearly than Version A and is easier to follow. Entities that are responsible for complying with this standard will find it easier to determine what is required of them for compliance. In addition, the levels of non-compliance are spelled out more clearly; there is less room for interpretation.

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**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

1) Subtitles should be added to sectionalize the standard and a table of contents added.

2) Jim Byrd presented Functional model issues to the NERC PC/OC/MIC on March 19, 2003 in Birmingham and stated that one of the major issues with the Functional model is that the functions are perceived to be organizations. Jim stated that efforts will be made to clarify that the functions are not organizations. Since all references to functions, such as, RA, BA, PA, TOP, etc. are listed in standards documents as "entities" for convenience; for example, sentences begin: "The RA shall..." instead of "Entities responsible for RA functions shall...", all NERC standards documents should contain a clarification statement explaining that the functions are not organizations and that all references to the functions should be interpreted as "entities responsible for --- function".

3) All assumptions should be listed in the standards document.

4) Footnotes of definitions should be repeated for each requirement write-up.

5) There should always be at least two levels of non-compliance defined.



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** The Standard should differentiate between real-time data and modeling data. We suggest the definition of "Real-time Data" should be "real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values". "Modeling Data" should be values characteristic of the facilities modeled to determine or estimate the power system performance.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

Yes

No

**Comments:** Please define "operational planning analyses" as used in this standard.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** This standard is for assuring the power system is operated within transmission limits. The functional responsibilities should be contained in this standards, not a certification standard. If necessary, the standard for certifying an "entity" to perform certain functions, like operating within transmission limits, should reference this document to assure the entity can be certified to perform those functions. Therefore, this standard should address base data and changes to that data.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

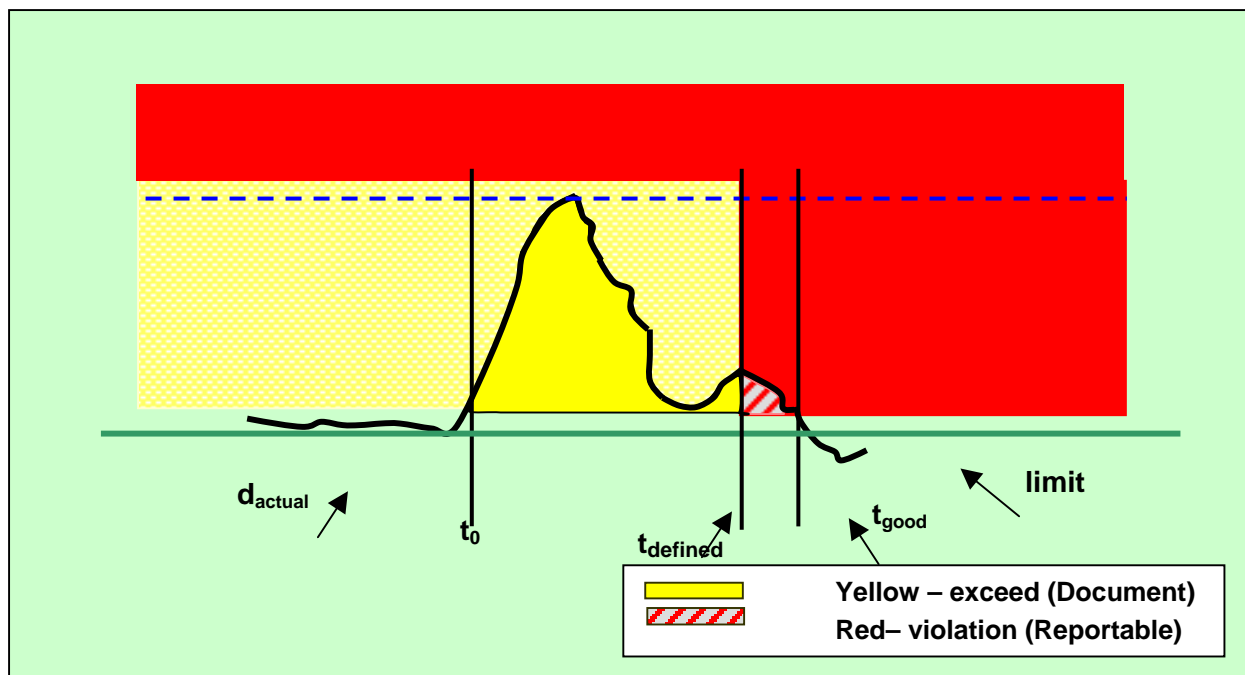
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Do you agree?

Yes

No

**Comments:** We agree with the requirement so long as an existing "Industry Accepted Format" is used and a new one is not created.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** There is not enough information to understand the chart nor to answer this question. Operating above a limit in an event the duration of which is less than the time frame upon which the limit is calculated does not seem to be a reportable violation. We are not sure what the dashed line represents. We agree that an operating limit could be exceeded for a short time, but less than the time frame upon which the limit is based, and not be considered a reportable violation.

6. Based on the above graph, do you agree with the concept that operating within the “red

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zone” is a reportable violation?

Yes

No

**Comments:** There is not enough information to understand the chart nor to answer this question. What kind of a limit is this? Does violating this limit cause cascading, uncontrolled separation of a significant portion of the Interconnect? If so, then we agree that this is a reportable violation. If this limit is a post-contingent thermal limit that won't cascade far, if at all, then this would not be a reportable violation.



**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Operational Planning Studies**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA**
- TOP**
- Generator**
- Planning Authority**

**Comments** The question should be restated to conform to the parenthetical statement - Who should provide the RA with generator operational chartacteristic data needed for system analyses? The Generator Owner function (consistent with the Revised Functional Model) should provide the generator data necessary for system analysis and operational performance to any and all functions needing that data, including the RA. If needed, the RA may request the necessary generator data from the Transmission Owner to whom the Generator Owner should be obligated to provide the data as part of its interconnection and operating agreement with the Transmission Owner.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA**
- BA**
- Generator**
- Planning Authority**

**Comments** The question should be restated to conform to the parenthetical statement - Who should provide the TOP or RA with generator operational characteristic data needed for system analyses? The Generator Owner function (consistent with the Revised Functional Model) should provide the generator data necessary for system

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analyses and operational performance analyses to any and all functions needing that data, including the TOP and RA. If needed, the TOP or RA may request the necessary generator data from the Transmission Owner to whom the Generator Owner should be obligated to provide the data as part of its interconnection and operating agreement with the Transmission owner.

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** The requirement should read "The RA shall continuously monitor real-time system parameters against system operating limits. System operating limits are established through the standard "Determine Facility Ratings, Operating Limits and Transfer Capabilities".

Please define "actual real time data". If it is the same as "real time data" then Measure 2 should read "Real-time Data is available in a form that can be compared to the system operating limits." We use the term "real-time data" as we have defined it in these comments.

The "Outcome" should be deleted as it is a restatement of the Requirement and adds nothing to this standard.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels of non-compliance should not be determined by the availability of telemetered data. Much of the information used to meet Measure 2 is derived from measured values by the state estimator or other calculations. An RAs level of non-compliance should reflect that function's ability to meet the Requirement as reflected in the Measures: 1) have the SOLs available in real time, and 2) real-time data in a form that can be compared to the SOLs. Please revise the Levels of Non-compliance to conform to the Measures.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Our comments to Requirement 1 apply to Requirement 2 also. Requirement 2 should also reflect the requirement that the TOP monitor all facilities to assure the real-time system parameters are under Facility Ratings.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Our comments to Requirement 1 apply to Requirement 2 also.

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** However, we suggest the requirement be more general stating "...data it needs from all entities using the transmission system to maintain the ..", deleting the list of some but not all functions.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

No

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** However, we suggest the requirement be more general stating "..data it needs from all entities using the transmission system to maintain the ..", deleting the list of some but not all functions.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:**

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** The RA should provide data when requested, not 7 days prior to energization. Please delete the phrase "no less than 7 days prior to the energization of new facilities or changes to existing facilities" from both the Requirements and the Measures.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The BA should provide data when requested, not 7 days prior to energization. Please delete the phrase "no less than 7 days prior to the energization of new facilities or changes to existing facilities" from both the Requirements and the Measures.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".



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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes
- No

**Comments:** The IA should provide data when requested, not 7 days prior to energization. Please delete the phrase "no less than 7 days prior to the energization of new facilities or changes to existing facilities" from both the Requirements and the Measures.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

- Yes
- No

**Comments:** The TOW should provide data when requested, not 7 days prior to energization. Please delete the phrase "no less than 7 days prior to the energization of new facilities or changes to existing facilities" from both the Requirements and the Measures.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The Generator Owner should provide data when requested, not 7 days prior to energization. Please delete the phrase "no less than 7 days prior to the energization of new facilities or changes to existing facilities" from both the Requirements and the Measures.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** We agree with this requirement in general. However, we suggest removing the term "when requested" from the Measures and add "as needed" in its place. The RA should be able to run analysis programs "when requested". It is more important he run the programs when needed to analyze the system limitations.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels of non-compliance should be based on the RAs not analyzing the system as needed to determine system limitations. The levels of non-compliance, as specified, will direct the RAs efforts to running an analysis "when requested", rather than analyzing the system. Therefore, we suggest changing the levels of non-compliance in a direction that will incite the RA to properly analyze the system.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Our comments to Requirement 10 apply here also.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Our comments to Requirement 10 apply here also.`

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** This requirement should be revised to clearly separate "prevent" and "mitigate" identified problems. This is also difficult to quantify. Suppose a next-hour contingency analysis is run based on expected load and generation and it shows a slight post-contingency overload. Then, the weather changes in the area of the overload, causing no overload (projected post-contingent) in real-time. Was this a Level 3 violation? The RA should forecast problems and observe the trajectory of the trends and then determine the appropriate course of action or inaction as the case may be.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** In general, this requirement is somewhat subjective and difficult to quantify. Operators will become unnecessarily conservative in order to meet this requirement.

Also, levels 2 and 3 of non-compliance must be revised, they are exactly the same.

Level 2 should read something like - "Monitoring and/or reliability analyses identified a potential problem - no actions, or incorrect actions, were taken but no limit violation".

Level 3 should read something like - "Monitoring and/or reliability analyses identified a

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problem, actions were taken but were not sufficient to mitigate the problem, but no instability, uncontrolled separation or cascading outages occurred.

Level 4 seems OK.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** Comments to Requirement 12 apply here also.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Comments to Requirement 12 apply here also.



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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** We agree with this Requirement, in general. However, the plan should not have to be "approved" by anyone other than through internal RA processes.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Our comment to Requirement 14 applies here also. It could also be argued that a TOP should share its mitigation plans with its RA.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The 2<sup>nd</sup> level could be that the mitigation plan exists, has been approved by the TOP, but hasn't been shared with its RA.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** How can an RA prove the negative, that is, how can they prove that a violation of system operating limits did not occur, unless they keep all operational data for some length of time? NERC needs to carefully consider this requirement, as the operational data generated on an hourly basis with a 4 second scan rate is unbelievably voluminous. We would prefer that a short rolling time limit be set for the retention of all EMS data, such as 3 months. There should be some kind of investigation procedure that triggers the analysis of this data on a post-event basis.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Following up on our comments in 40, we believe that the levels would be 1. Some data was available but not enough to complete the analysis. Report was filed on time but

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was incomplete. 2. Not Applicable. 3. (We agree with level 3 as shown.) and 4) Data was wholly missing and / or documentation didn't exist.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** We believe that our answers to questions 40 and 41 are also significant here.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels of noncompliance should include Level 3, Data doesn't exist. We believe that our answers to questions 40 and 41 are also significant here.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**



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**1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** The term data must be qualified as real time when real time data is being compared to short term operational limits.

**2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:** RAs should be required to run (on-line/real-time) automated studies to identify bulk reliability concerns, but TOPs should not be subject to such requirements. I don't believe the Standard reads as though manual analysis is sufficient, as it references "analysis tool" availability and the makes mention of "reliability analysis did not run" in a multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement - particularly since the RAs will be required to use such tools anyway.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this "base data" that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** The focus is only on providing specifications for the data required. There appears to be a hole in that no requirement to actually provide the real-time data is spelled out. For example, the TOP's are required to specify and require data, but they don't appear to be required to actually PROVIDE data to RAs.



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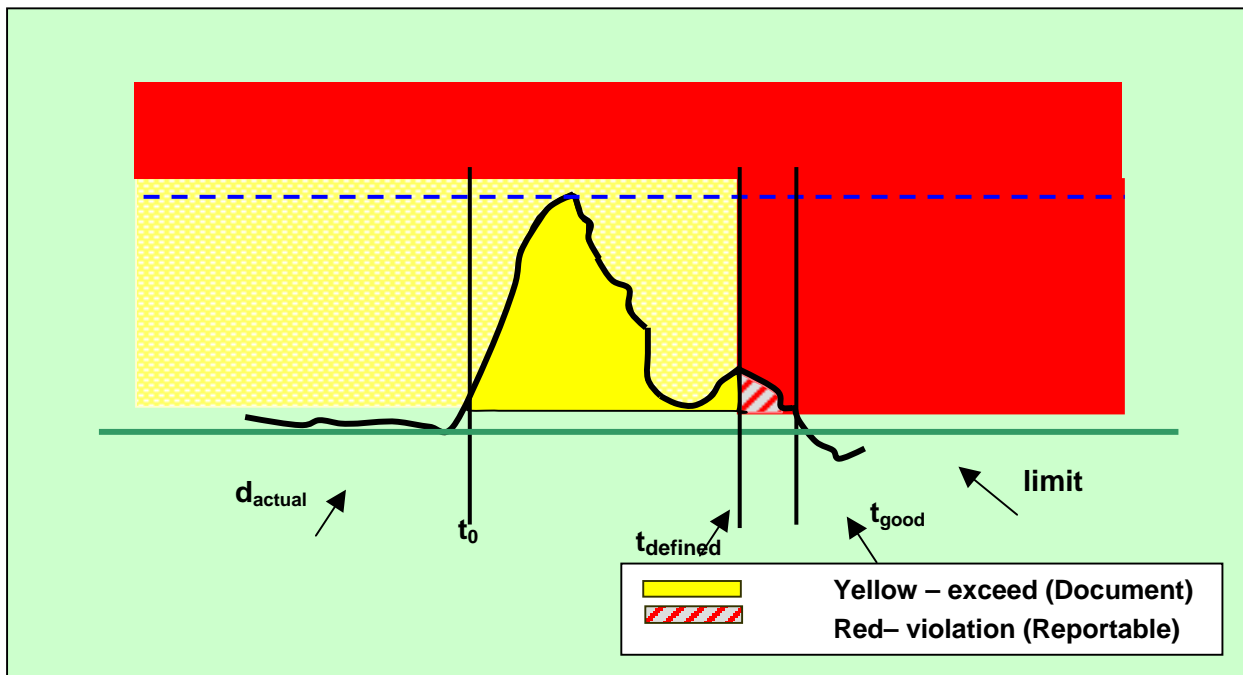
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

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**Yes**

**No**

**Comments: It should further be clarified that operation in such a zone is a violation regardless of whether or not instability/cascading outages happened or could have happened - if the limit was exceeded for the specified time, it is a reportable violation under any prevailing system conditions.**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Surrogate Value needs to be defined.**

**Supporting Documentation needs to be defined**

**If possible, please provide us with a definition for each of these terms.**

System operator limits as defined herein is appropriate for RAs, but should not be defined as provided herein for TOPs. For TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived herein, this standard does not result in any entity assuring that the bulk power system is operating within limits, it only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments A single source for this data is desired**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments A single source for this data is desired**

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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:** In the outcome section, actual data should be qualified as actual real time data.

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Should read, for example: "Actual telemetered data needed for monitoring system operating limits provided to the RA as specified, but unavailable to the operator, so surrogate value was monitored for up to 24 hours." In each of the first two measures, this caveat noting that the compliance failure should only be considered a failure when the RA is getting the data, but mishandling it. Said another way, if the RA isn't getting the data because the TOPs (or others) are not sending the data, then no non-compliance occurs.

Level #1 should be 48 hours, level #2 should be 72 hours, and level #3 should have a 96 hour requirement. In many instances, 24 hours may be impractical especially with reliance on outside communication providers.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** In 1 and 2, the words "for more than 3 hours" should be added after the word unavailable. Loss of telemetry for short periods is an unfortunate but fairly routine matter - with all that telemetry equipment in the field, it can't be expected that none of it ever has down-time.

Level #1 should be 48 hours, level #2 should be 72 hours, and level #3 should have a 96 hour requirement. In many instances, 24 hours may be impractical especially with reliance on outside communication providers.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level #1 and #2 non-compliance should be level #3 and level #4 non-

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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compliance. Level #1 and level #2 should be changed to "Not Applicable".

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level #1 and #2 non-compliance should be level #3 and level #4 non-compliance. Level #1 and level #2 should be changed to "Not Applicable".

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses



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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** This is too vague - provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.

The industry will need to change its current business practices in order to comply with requirement.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** This is too vague - provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.

The industry will need to change its current business practices in order to comply with requirement

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** This is too vague - provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.

The industry will need to change its current business practices in order to comply with requirement

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** This is too vague - provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.

The industry will need to change its current business practices in order to comply with requirement.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** This is too vague - provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.

The industry will need to change its current business practices in order to comply with requirement.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** is it practical to require on-line dynamic, voltage, and small signal stability analysis, or can an RA use a proxy?

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level #3 should read "Reliability analysis did not run when requested, but ran in 24-48 hours" and level #4 should be added to read "Reliability analysis did not run when requested, and did not run in 48 hours"

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** RAs should be required to run (on-line/real-time) automated studies to identify bulk reliability concerns, but TOPs should not be subject to such requirements. I don't believe the Standard reads as though manual analysis is sufficient, as it references "analysis tool" availability and the makes mention of "reliability analysis did not run" in a multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement - particularly since the RAs will be required to use such tools anyway.

See comment under question #7 regarding the definition of operating limits.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** see #30

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** "Problem" is too vague. Also, this should not be tied solely to instability, uncontrolled separation, or cascading... other operating limits also need to be consistently adhered to.

System Operating Limit should be in caps to be consistent with the definition on page 2.



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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** "Problem" is too vague. Also, this should not be tied solely to instability, uncontrolled separation, or cascading... other operating limits also need to be consistently adhered to.

System Operating Limit should be in caps to be consistent with the definition on page 2.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** It should be clarified that these plans need to include system intact and applicable prior-outage conditions.

: System Operating Limit should be in caps to be consistent with the definition on page 2. The requirement section language should be the same as that for requirement #15.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** It should be clarified who needs to approve these plans - corporate management, NERC....

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** It should be clarified that these plans need to include system intact and applicable prior-outage conditions.

System Operating Limit should be in caps to be consistent with the definition on page 2.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** It should be clarified who needs to approve these plans - corporate management, NERC....

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:** System Operating Limit should be in caps to be consistent with the definition on page 2. What is the significance of a three year retention requirement? Suggest a one year retention requirement.

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** System Operating Limit should be in caps to be consistent with the definition on page 2.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level #4 should read "Data didn't exist" instead of "Documentation didn't exist"

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** See comments already made above regarding the scope of the definition of system operating limits.

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** I think version B is written more clearly than version A and is easier to follow. I think that the entities that are responsible for complying to this standard will find it easier to determine what is required of them for compliance. I also think that the levels of Non-Compliance are spelled out more clearly, there is less room for interpretation.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** The Outcome section should have 100% Compliance Requirement added to it. 100% Compliance is identified in the Comment document but not in the standard itself. I think this should be added throughout the document.

Section 204(e) is incorrectly numbered as 203(e) (Version B)

Section 204 (e) and (f) are mislabeled 205(e) and (f) (Version A)

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Section 202(f) is mislabeled as 201(f) (Version B)

The Compliance Monitoring sections are not evaluated above - this comment applies to them: In the Compliance Monitoring Process section it states that the entity responsible for complying shall have the following data available upon request of the Compliance Monitor; it does not state the time period within which the entity must respond. I think that a specific time requirement in which the information shall be provided needs be added. Adding the specific time to provide the information makes the requirement more measurable. This is true for Sections 201 - 206.





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**1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** The term 'data' as it applies to this standard should only be applicable to 'real time' or 'actual metered' data.

The term "actual" should be removed from the sentence reading "actual real time data associated with those limits". ACTUAL implies REAL and "real" data is only one of the several types of data which are being defined in the footnote as being included as "real time data". Suggestion: Simply use the phrase "real time data". That would make it easier to accept the definition of "data" described in footnote 2 as being "real, state estimated or other...etc".

**2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

Yes

No

**Comments:** It is agreed that Reliability Analysis may include consideration of results of planning studies, however this proposal includes language which would require Transmission Operators to conduct these analyses along with RA's. While large RTO's performing TOP functions may have no problem acquiring system models and other tools with which to perform these studies, smaller TOP's such as Coop, PUD's and other non-jurisdictional TOP's who may operate Transmission Systems may have neither the tools nor the staffing to do anything but use manual monitoring to maintain system reliability.

The drafting team should assess the feasibility of this requirement being met by small non RTO participant TOP's.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this "base data" that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** In order to accurately model system operations for reliability analysis, the RA should have data relating to the intended actual operation of system facilities. While revisions to the base

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data will certainly be necessary for system modeling, additional near real time operational data must be considered even if there is no change to facilities or to the base data. The standard should make it clear that additional data, above and beyond that provided as base data may be required of facility owners.

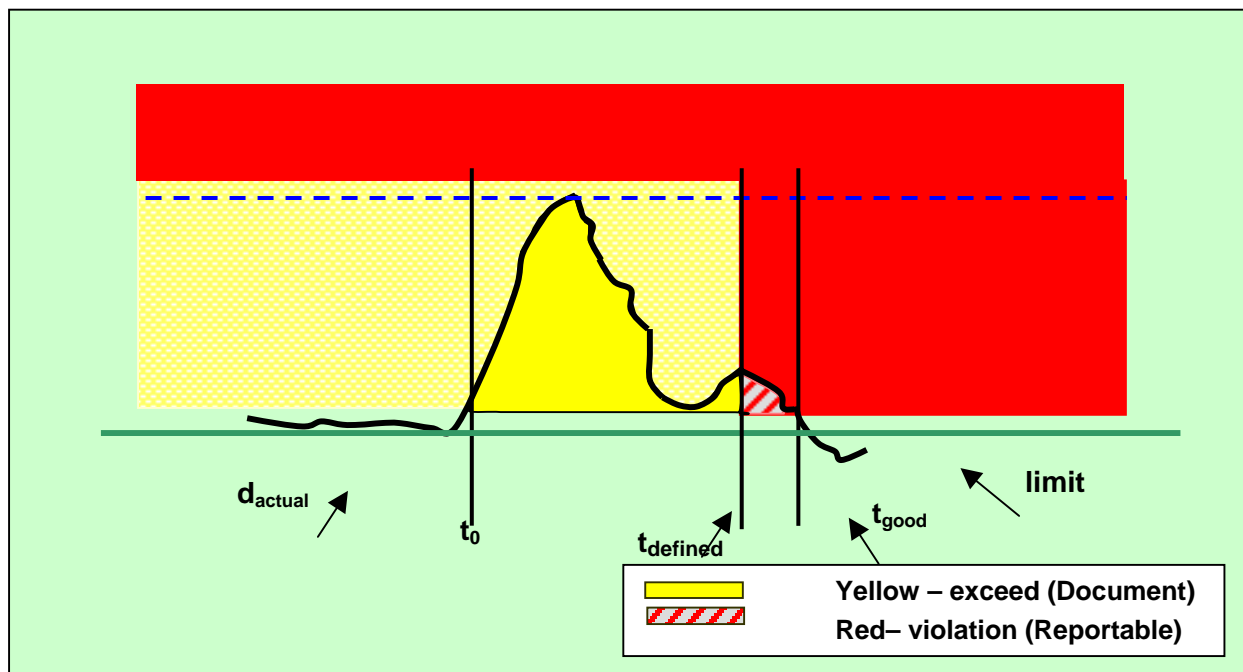
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

**Comments:** The industry accepted format should be arrived at by industry consensus.



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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

**Yes**

**No**

**Comments:** But, the lines and arrows look like they need some more accurate placement.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

**Yes**

**No**

**Comments:** But, the lines and arrows look like they need some more accurate placement.

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

**Self Certification**

The various types of "data" referred to in the standard. The standard should be very specific about what type of data is acceptable.

If possible, please provide us with a definition for each of these terms.

8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

Comments With regards to this and subsequent references to "Generator"; the Functional Model has recently been expanded (in draft at least) to include Generator Owners and Generator Operators. This standard should refer to those particular entities when making requirements for Generators.

9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

Comments See #8 re: Gen Operator/Gen Owner

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Please use Version A of the draft standard to answer these questions.

### Requirement 1:

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### Outcome(s) (100% Compliance):

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### 10. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** In general we agree---but do have some reservations:

In the requirements---The terminology related to instability, separation, and cascading outages are more often associated with Operating Security Limits than with System Operating Limits.

In the outcomes---The word SHALL sounds too much like a requirement, in fact this whole statement mimics the requirement very closely. The outcome should relate meeting the requirement to its effect and might read something like.. "The RA closely monitors the bulk electric system assuring reliable operation. At any rate, the Reliability Authority should be monitoring critical facilities that could cause a violation to the set operating limits - those critical facilities should have already been identified in the operating planning studies. 'Assuring reliability' means that upon a violation of a system limit, actions are taken to move the system back within the correct operating limits.

### Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### 11. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** I think what the TOP is monitoring is not the limits but the critical parts of the system to ensure the limits are no violated

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** The data the RA needs to collect in order to maintain models should be determined through some collaborative process involving the interested parties. The determination of what data to collect should not be based on subjective, arbitrary requests but rather on defensible criteria which are consistent across the industry.

Confidentiality of third party market sensitive information may be an issue which needs to be addressed.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**15. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Should this be a yes - no answer? What if a party was required to provide 10 parameters and provided 9 of the 10. The current levels would have this be a violation. Should there be two interim levels (3 and 4: over or under 85% of required data for example) which provide a bit of leniency? As written, the compliance levels don't agree with this portion of the standard they are too vague



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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

- Yes  
 No

**Comments:** A qualified YES: The determination of required information should not be done unilaterally by the TOP as this language implies. It should be determined through a collaborative process, and should protect market sensitive information to the greatest extent possible while still maintaining a reliable system.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** There seems to be some middle ground between yes and no which should fill in levels 3 and 4 as above.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** 7 days is too short a period to fully evaluate the impact of new facilities on system. Six months seems a more reasonable time frame.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be levels of compliance based upon notification and collaboration with affected parties

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** 7 days is too short a period to fully evaluate the impact of new facilities on system. Six months seems a more reasonable time frame.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be levels of compliance based upon notification and collaboration with affected parties

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Responsibilities relegated to the IA in the Functional Model are related to the implementation of Interchange Schedules; they do not include responsibilities related to this requirement.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** IA's do not normally have the information referred to in the requirements.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** 7 days is too short a period for evaluation of system impacts.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be levels of compliance based upon notification and collaboration with affected parties

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Is 7 days the appropriate time frame for data submittal?? Does it allow sufficient time for proper analysis of the impact on the system? Seems like the data needs to be submitted in the time frame of weeks before energization in order to do system studies. Six months may be required, in some cases at least.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should be levels of compliance based upon notification and collaboration with affected parties

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** In principle we agree, this 'analyses' needs to be done immediately prior to the operating day - Some description needs to be added to provide clarity on when the analyses are supposed to be completed

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Not stringent enough.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** The drafting team should consider the requirement for TOP's to run reliability analysis "programs" in the context of the small, non-RTO, Transmission Operator who may not have access to these tools.

Again, clarity as to when the analysis must be completed.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Too lax.



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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** But..is there really a substantive difference between level 2 and level 3? Should three read "...no reportable violation occurred"????

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** The and/or language implies that monitoring is sufficient and other more sophisticated analysis tools are optional. This is appropriate language which will allow smaller TOP's to be compliant.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** But..is there really a substantive difference between level 2 and level 3? Should three read "...no reportable violation occurred"????

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** The plan should be the result of a collaborative effort of all involved parties.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Compliance needs to affirm that a collaborative process took place in the development of the 'mitigation plan'.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** The plan should be the result of a collaborative effort of all involved parties.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Compliance needs to affirm that a collaborative process took place in the development of the 'mitigation plan'.

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:** In the West, differences are settled through the WECC OTCP process.

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:** This standard needs to discuss a process or point to a process by which all of the operational planning studies (the 'seasonal base case data') and 'mitigation plans' (our operating procedures) are developed, reviewed, discussed and agreed upon. This is a very big gap in this standard.

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** Requirements sorted or grouped by entities described in the functional model might be helpful for finding requirements related to a particular function ie: Requirements for generators.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** It seems to be too long! The drafting team should look to consolidate where ever possible. Requirements 5, 6, 7, 8, & 9 seem to be prime candidates for incorporation into a single requirement which is applicable to the different entities.

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<b>STD Commenter Information (For Individual Commenters)</b>	
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:** Such a broad definition that includes "real-time" and "operational planning" allows for a great amount of variability in what the RA must do to assess the security/reliability of the system. This results in difficulty in assessing and measuring compliance. E.g. - one RA may perform real-time studies whereas another may not. If this broad definition is adopted, then specific references in the standard to a "real time" or "operational planning" time frame as to when these analysis are performed is needed.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** The certification standard for all NERC Reliability Model functions should rely on the reliability standard itself to describe the particular requirements. A certification standard should only assess on a general level whether a reliability function is capable of performing its intended function(s). The Operating Within Limits Standard must - on its own - detail the exact data requirements for all RAs and TOPs and not have to rely on a Certification Standard to provide the data. In fact, the Certification Standard(s) should reference the Operating Within Limits Standard (and other applicable standards) to obtain the needed data for certification.

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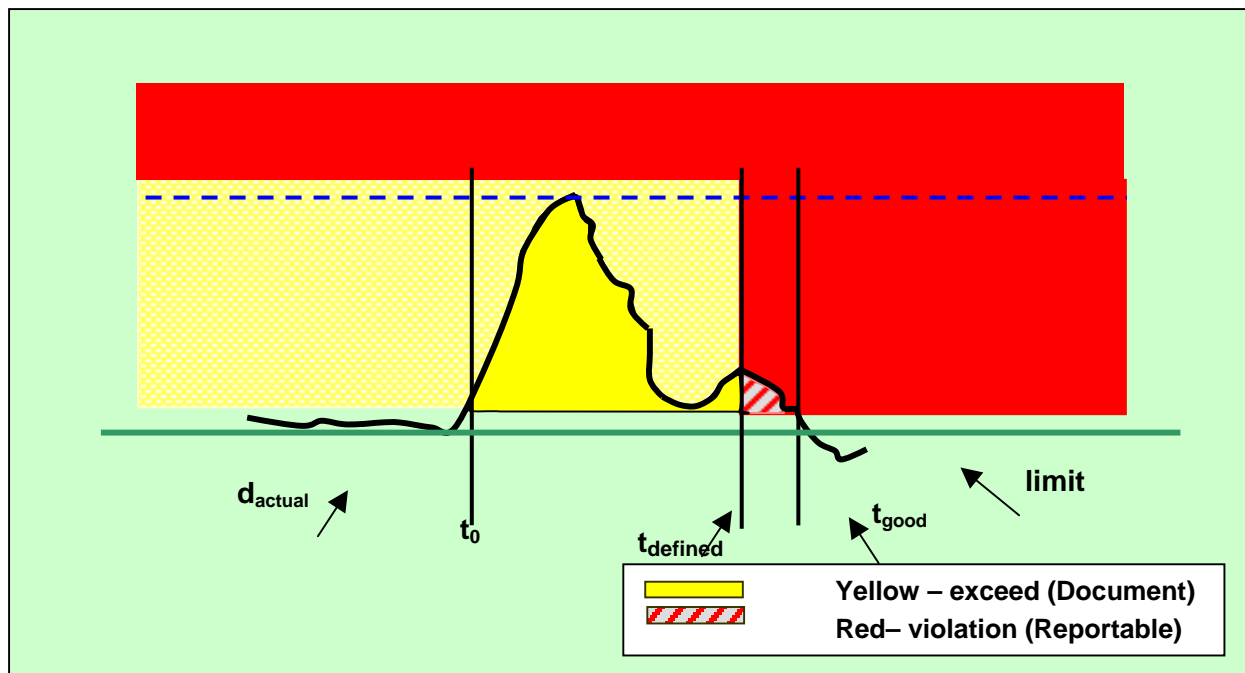
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

**Comments:** The term "Industry Accepted Format" may be interpreted to be RTO established, Regional Reliability Council established or some standards setting organization (non-NERC) established format. The Standard should either specify the format - or if a single format is not applicable for the entire North America, then the Standard should provide enough direction for those who must comply with its requirements as to where/who will specify the format.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** The yellow zone is clearly a region where the operations exceed a stated "safe" limit.

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To maintain the integrity of that limit, such excursions must be recognized. These should be reported to NERC and recorded though not defined as a "reportable violation".

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

**Yes**

**No**

**Comments: The Red region represents a condition where the system has operated beyond some specified time period in which the industry has agreed it will try to alleviate the excursion. The "reportable violation" is defined in conjunction with both the MW amount and the "t defined". The "t defined" should be a value that is proposed and commented on in the development of the Operate Within Limits Standard.**

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

If possible, please provide us with a definition for each of these terms.

8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

**Comments** The generator operational characteristics are needed for many purposes and this information may be needed by others besides the RA. NERC should require a single coordination point for the submittal of this information. One must not be required to submit this same information repeatedly to different entities or "authorities". E.g. - if there is already a requirement for generator operational characteristics to be supplied to the Planning Authority, then the PA may be authorized to provide it to the RA. Data confidentiality agreements may apply.

9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

**Comments** The generator operational characteristics are needed for many purposes and this information may be needed by others besides the RA. NERC should require a single coordination point for the submittal of this information. One must not be required to submit this same information repeatedly to different entities or "authorities". E.g. - if there is already a requirement for generator operational characteristics to be supplied to the Planning Authority, then the PA may be authorized to provide it to the

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**RA. Data confidentiality agreements may apply.**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Level 1 may require a more stringent time frame than a 24 hour loss of telemetered data. RAs should have the most accurate information at all times. There is no apparent check whether the surrogate value is as accurate as the actual telemetered data. Reliability may be greatly jeopardized if the RA employs inaccurate data for a 24 hour period. We recommend for Level 1 compliance that surrogate values not be relied on for more than 4 hours. This provides incentive to recover from the loss of data well within the operating time frame of the wholesale market 8 hour block schedules. For Level 2 compliance, 24 hours is appropriate. As an alternative, there could be some recognition in the suggested compliance levels for the time of day (& day of week) as to when the data is not available. This system visibility that this information provides is most critical when the system is in danger of a operating limit violation.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please see comments on Question #11.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses



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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** It is unclear what the relationship and responsibilities of the TOP are as compared to the RA. The Standard proposes the same language for both functions. What is the reporting relationship and operational hierarchy between the RA and the TOP? Is the TOP analysis more "local" in nature than the RA analysis? What if each one's analysis does not agree? Which analysis will prevail to ensure grid reliability?

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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### **Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **32. Do you agree with this requirement?**

Yes

No

**Comments:** The RA must not act when there are market mechanisms available to mitigate/prevent the identified problem. This Standard must recognize that such congestion management processes will be accommodated by the RAs before RAs take actions. The Standard must coordinate with the business practice or standard that will be employed to relieve congestion or anticipated system problems.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** These compliance measures do not recognize the accommodation and coordination with market mechanisms to achieve the reliability objective.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** It is unclear what the relationship and responsibilities of the TOP are as compared to the RA. The Standard proposes the same language for both functions. What is the reporting relationship and operational hierarchy between the RA and the TOP? Is the TOP analysis more "local" in nature than the RA analysis? What if each one's analysis does not agree? Which analysis will prevail to ensure grid reliability?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Same comment as for Requirement #12, question # 32.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Same comment as Requirement #13, question #34.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** It is unclear as to how the system operating limits are established and by who. It is also unclear what the specified period of time that the system exceeds the limit is established and by who. These limits and time periods must be known and pre-approved in a process where all parties that may be affected by the violation can comment.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** These non-compliance levels do not specify what the conditions for an "incident" are. Does the standard rely on the definition of "reportable incident" proposed in Question #5 as the threshold for compliance measurement?

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** Same comments as for questions # 34 and #40.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:** The Standard should be able to address all Regional and Interconnection differences.

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** As stated in comments to Question #32, there must be coordination between the reliability mitigation procedures and business procedures for congestion management.

**If yes, please identify what you feel should be added.**

**Coordination requirements with business standards for congestion management.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

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**STD Commenter Information (For Individual Commenters)**

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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities





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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

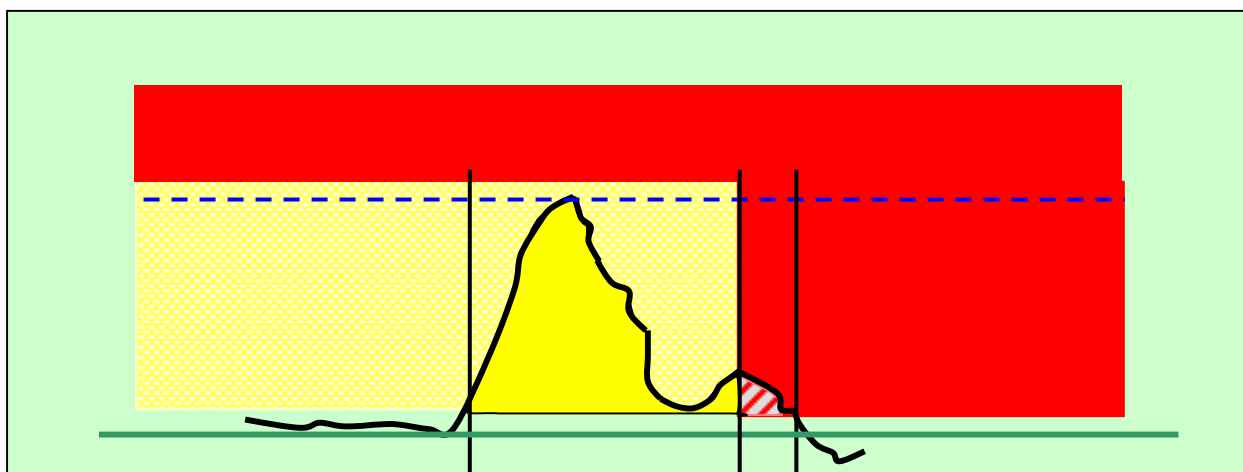
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

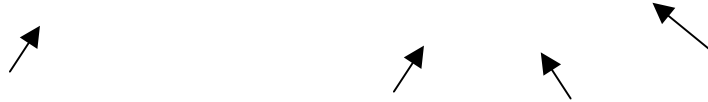
No

**Comments:** This term is too vague to be utilized in the standard. At a minimum, the term should reference another standard (developed by NERC and/or NAESB) where the “standard” format is fully described. As the term is used within the standard, it seems that potentially, each RA could specify a different meaning. This is something that must be avoided.



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

If possible, please provide us with a definition for each of these terms.

8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

Comments

9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

Comments: Under certain circumstances (for example during the interconnection process) it is probably more efficient for the generator to provide information directly to the TOP. Generally, however, the flow of information should be retained.

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** May not be reading this correctly, but it seems unreasonable that if some data is missing during a 24-hour period that the RA is deemed to be non-compliant. Seems like there should be allowance for some sort of tolerance before being deemed non-compliant.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** May not be reading this correctly, but it seems unreasonable that if some data is missing during a 24-hour period that the RA is deemed to be non-compliant. Seems like there should be allowance for some sort of tolerance before being deemed non-compliant.

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### **Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### **Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### **14. Do you agree with this requirement?**

Yes

No

**Comments:** Note that this "industry accepted format" must be somehow defined by the industry (via either NERC or NAESB as appropriate), and not vary from RA to RA.

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### **15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Comments:

#### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

#### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

#### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

#### 16. Do you agree with this requirement?

Yes

No

**Comments:** Consistent with the Functional Model, shouldn't the TOP request and receive the necessary data from the RA. It seems as if data requests are flowing in too many directions, which can result in models operating off of different data sets. Also, note that this "industry accepted format" must be somehow defined by the industry (via either NERC or NAESB as appropriate), and not vary from RA to RA.

#### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

#### 17. Do you agree with these levels of non-compliance for this requirement?

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses



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Yes

No

**Comments:** No, only because I don't concur with requirement 16.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Not sure that non-compliance should jump right to level 4.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Not sure that non-compliance should jump right to level 4.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Not sure that non-compliance should jump right to level 4.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** Believe the requirement should specify which entities can make a request of the RA. Would also think that there should be a distinction made between requests of a real-time and planning nature.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Should be a distinction between non-compliance for real-time and planning requests.

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### **Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### **Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **30. Do you agree with this requirement?**

Yes

No

**Comments:** The measure should specify which functions can make a request of the TOP. There may also be a need to make a distinction between real-time and planning requests.

### **Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

### **31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Should be a distinction between non-compliance for real-time and planning requests.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** Question whether this is fully compliant with the Functional Model. Shouldn't the TOP take direction from the RA regarding the implementation of reliability matters? Or does it take direction from the RA and have the responsibility to act independently and report its actions to the RA?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Agree in concept, but unclear as to who approves the mitigation plan and on what basis. Does it fall upon NERC to make these determinations?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Again, agree in concept, but unclear as to what process will be used to approve the mitigation plan.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** Version A makes it easier to cite specific measures and/or requirements. However, by simply adding some numbered sub-bullets, the same could be said for Version B.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** “Real” should include manually monitored values.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

**Do you agree?**

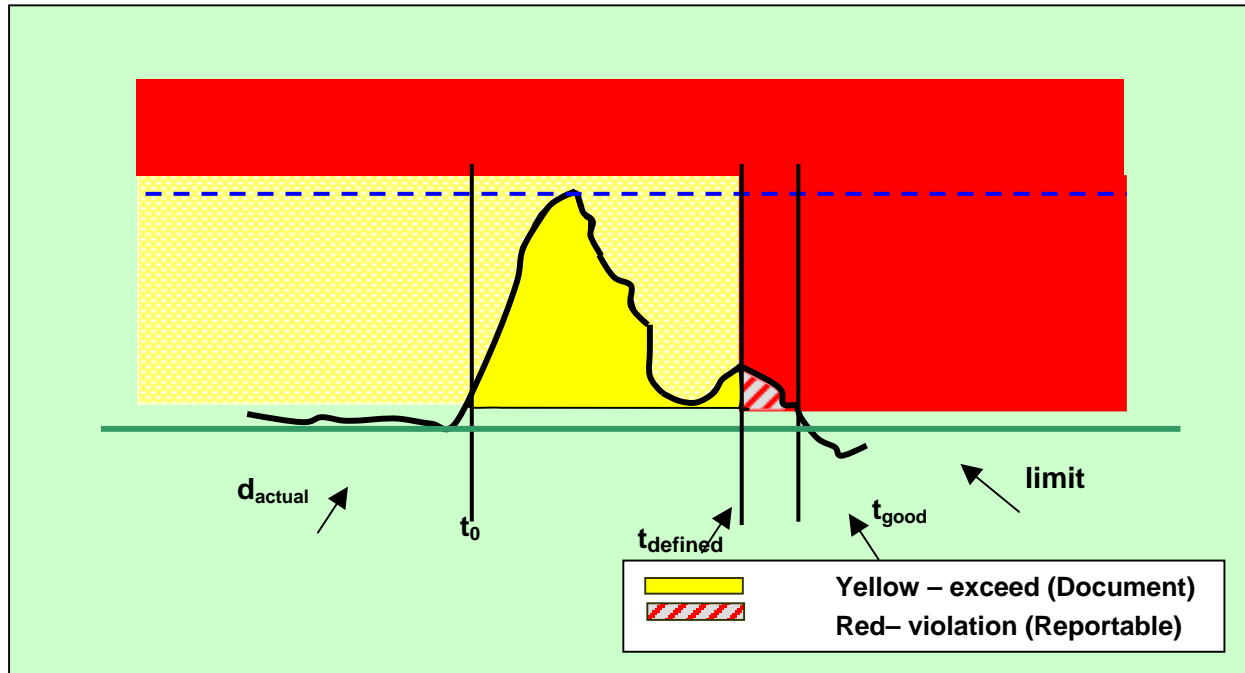
**Yes**

**No**

**Comments:**



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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

- Yes  
 No

**Comments:** This is an excellent graph, but I am unsure the intent of including it in these comments? The graph depicts an OSL violation involving time and is too simplistic. OSLs could also be violated by exceeding the continuous ratings, or by exceeding emergency ratings for post-contingency flows monitored by state estimators. An OSL violation could also involve exceeding post-contingency voltage limits or stability limits where cascading could result. If OSL violations are going to be defined in this document, then all potential violation should be addressed.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

- Yes  
 No

**Comments:** This graph shows the possibility of an OSL violation occurring for a momentary excursion above a limit without exceeding a limit for a period of time ( $t_{\text{defined}}$ ). I was not

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aware that this constituted a violation.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:** I agree with the intent. However, the RA is actually monitoring the actual real time data and comparing it against the system operating limits. A definition of "system operating limits" would allow for the removal of the parenthetical phrases in Requirement 1.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** There should not be non-compliance at level 1 or 2 when the RA or TOP stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** I agree with the intent. However, the RA is actually monitoring the actual real time data and comparing it against the system operating limits. A definition of "system operating limits" would allow for the removal of the parenthetical phrases in Requirement 1.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There should not be non-compliance at level 1 or 2 when the RA or TOP stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **16. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### **17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement 212 and 213 are very similar. Requirement 212 applies to Reliability Authorities and requirement 213 applies to Transmission Operators. There should be some coordination so that the two entities don't take different actions.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement 212 and 213 are very similar. Requirement 212 applies to Reliability Authorities and requirement 213 applies to Transmission Operators. There should be some coordination so that the two entities don't take different actions.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement 214 and 215 are very similar. Requirement 214 applies to Reliability Authorities and requirement 215 applies to Transmission Operators. Coordination among the two entities should be required.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement 214 and 215 are very similar. Requirement 214 applies to Reliability Authorities and requirement 215 applies to Transmission Operators. Coordination among the two entities should be required.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Add descriptive titles to the subsections for ease of reading.

**48. Please list any other comments you may have in the space below.**

**Comments:**



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** The specified data should include manually calculated values. Data should include real-time, state estimated, calculated or manually monitored values. It should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

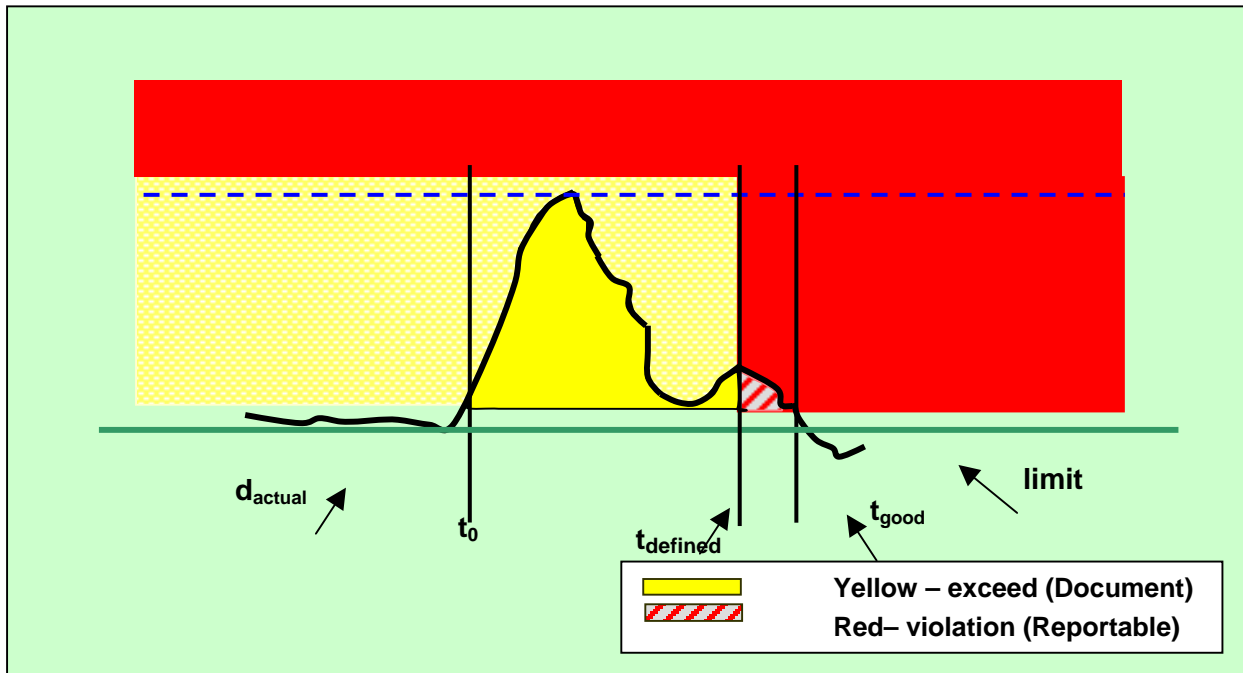
**Do you agree?**

**Yes**

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No

Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** It would be of value to state that a reportable violation does not exist until the Operating Security Limit has been consecutively violated for t<sub>defined</sub>. It would also be of value to state that the exceeding of the operating limit for any period of time must be documented. If in the graph the monitored value dipped below the Operating Security Limit for an instance and then exceeded the limit for the rest of the period and that was still an Operating Security Limit Violation, another loophole will have been addressed. Documenting near misses is also a good idea

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No



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**Comments: The graph is confusing and additional wording should be added to clarify.**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**(1) Occurrence Period, (2) Operating Security Limit Violation**

**If possible, please provide us with a definition for each of these terms.**

(1) Occurrence Period - What do you mean when you refer to an Occurrence Period, need better definition

(2) Operating Security Limit Violation - A limit that results in instability, uncontrolled separation, or cascading outages if exceeded for more than one hour. We believe this definition is appropriate for the existing NERC template on Operating Security Limit Violation.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments** The Generator is the best possible resource. However, as long as the data is accurately supplied, it doesn't matter who supplies it. I don't think the standard should be too prescriptive on who supplies the data.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments** The Generator is the best possible resource. As long as the data is accurately supplied I don't care who supplies it. I don't think the standard should be too proscriptive on who supplies the data.

# STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

Please use Version A of the draft standard to answer these questions.

## Requirement 1:

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

## Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

## Outcome(s) (100% Compliance):

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

## 10. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed.

## Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

## 11. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** . (1) Operating Security Limits are not usually monitored in real time. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Note 1 says - 'Real Time could be continuous analog data or data sampled at a rate greater than or equal to one minute -----'. One minute is a unit of time not a rate. It should say - 'Real time could be continuous analog data or data sampled faster than or equal to once a minute-----'. (4) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202 applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing

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wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed. (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. This concept also needs to be reflected in section 202 (e) Compliance Monitoring Process.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** (1) Operating Security Limits are not usually monitored in real time. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202

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applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA’s hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. We would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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Yes

No

**Comments:** . Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.



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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:** We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. I would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes  
 No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) Change 'by an (associated) RA' to 'by another RA'. Less words, more descriptive. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the BA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes  
 No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the IA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the TOP can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the Generation Owner can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### **Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **28. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

### **Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

### **29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The Reliability Coordinator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The Transmission Operator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.



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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** We agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. We don't think that the Reliability Coordinator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don't think that the Transmission Operator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:** (

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** 1) Throughout the standard the term Reliability Authority is used. This term is out of date and has been replaced by Reliability Coordinator. Is the Reliability Authority in this questionnaire identical to the Reliability Coordinator function? This issue needs clarification. If the Reliability Authority in this questionnaire is different than the Reliability Coordinator function, there needs to be an explanation of the difference. (2) Throughout the standard the term 'system operating limit' is used. This term should be replaced with the term 'Operating Security Limit'. There are many different system operating limits. These standards do not apply to all of them. This standard only applies to Operating Security Limits violations. The term Operating Security Limit should be used and defined to distinguish it from the multitude of system operating limits that are routinely used in everyday operation.

**If yes, please identify what you feel should be added.**

**(1) Throughout the standard replace the term Reliability Authority with Reliability Coordinator.  
(2) Throughout the standard replace the term 'system operating limit' with Operating Security Limit. Write a definition of Operating Security Limit.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** It will be easier to modify the standards if each requirement is a stand alone item.

**47. If you have comments on the format of the standard, please share them with us.**

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<b>STD Commenter Information (For Individual Commenters)</b>	
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** As long as specified data includes manually calculated values. Data should include real-time, state estimated, calculated or manually monitored values. It should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** This assumption needs to be clearly stated at the front end of the standard.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

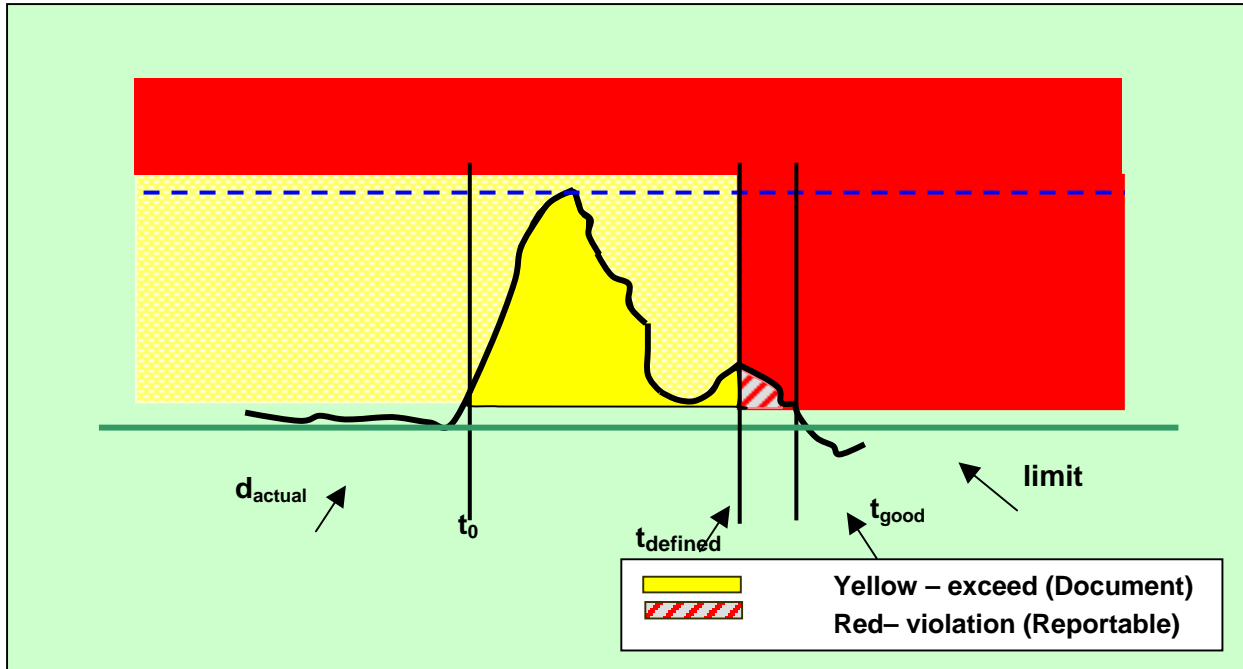
**Do you agree?**

**Yes**

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No

**Comments:** This assumption needs to be clearly stated and also should be similar to 4B of NERC policy



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes  
 No

**Comments:** It would be of value to state that a reportable violation does not exist until the Operating Security Limit has been consecutively violated for  $t_{defined}$ . It would also be of value to state that the exceeding of the operating limit for any period of time must be documented. If in the graph the monitored value dipped below the Operating Security Limit for an instance and then exceeded the limit for the rest of the period and that was still an Operating Security Limit Violation, another loophole will have been addressed. Documenting near misses is also a good idea

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

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No

**Comments: The graph still remains confusing and violations should be better defined.**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**(1) Occurrence Period, (2) Operating Security Limit Violation**

**If possible, please provide us with a definition for each of these terms.**

(1) Occurrence Period - Not sure what you mean when you refer to an Occurrence Period, need better definition

(2) Operating Security Limit Violation - A limit that results in instability, uncontrolled separation, or cascading outages if exceeded for more than one hour. We believe this definition is appropriate for the existing NERC template on Operating Security Limit Violation.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments** The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the Reliability Coordinator (RC) should use data from the BA, the TOP, or the Planning Authority, if he can't get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the TOP. This should be allowed. As long as the data is accurately supplied, it doesn't matter who supplies it. I don't think the standard should be too prescriptive on who supplies the data.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments** The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the TOP should use data from the Reliability

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**Coordinator (RC), the BA, or the Planning Authority if he can't get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the RC. This should be allowed. As long as the data is accurately supplied I don't care who supplies it. I don't think the standard should be too proscriptive on who supplies the data.**

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Please use Version A of the draft standard to answer these questions.

## Requirement 1:

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

## Measure(s):

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

## Outcome(s) (100% Compliance):

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

## 10. Do you agree with this requirement and its associated performance/outcome and measure/s?

Yes

No

**Comments:** We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed.

## Levels of Non-compliance for this Requirement:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

## 11. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** . (1) Operating Security Limits are not usually monitored in real time. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Note 1 says - 'Real Time could be continuous analog data or data sampled at a rate greater than or equal to one minute -----'. One minute is a unit of time not a rate. It should say - 'Real time could be continuous analog data or data sampled faster than or equal to once a minute-----'. (4) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202 applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing

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wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed. (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. This concept also needs to be reflected in section 202 (e) Compliance Monitoring Process.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** (1) Operating Security Limits are not usually monitored in real time. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202



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applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. We would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'. What is the difference between accurate data and technically accurate date? Is technically accurate data better that accurate data? Is technically accurate date different that accurate data?

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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Yes

No

**Comments:** . Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. I would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes
- No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) Change 'by an (associated) RA' to 'by another RA'. Less words, more descriptive. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the BA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes  
 No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the IA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the TOP can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the Generation Owner can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

### **Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

### **Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

### **29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** The Reliability Coordinator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The Transmission Operator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. We don't think that the Reliability Coordinator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don't think that the Transmission Operator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Version A and Version B of this questionnaire have different descriptions of non-compliance for this requirement. The standard needs to define which description is correct.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Version A and Version B of this questionnaire have different descriptions of non-compliance for this requirement. The standard needs to define which description is correct.

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:** (

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**



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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** 1) Throughout the standard the term Reliability Authority is used. This term is out of date and has been replaced by Reliability Coordinator. Is the Reliability Authority in this questionnaire identical to the Reliability Coordinator function? This issue needs clarification. If the Reliability Authority in this questionnaire is different than the Reliability Coordinator function, there needs to be an explanation of the difference. (2) Throughout the standard the term 'system operating limit' is used. This term should be replaced with the term 'Operating Security Limit'. There are many different system operating limits. These standards do not apply to all of them. This standard only applies to Operating Security Limits violations. The term Operating Security Limit should be used and defined to distinguish it from the multitude of system operating limits that are routinely used in everyday operation.

**If yes, please identify what you feel should be added.**

**(1) Throughout the standard replace the term Reliability Authority with Reliability Coordinator.  
(2) Throughout the standard replace the term 'system operating limit' with Operating Security Limit. Write a definition of Operating Security Limit.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** It will be easier to modify the standards if each requirement is a stand alone item.

**47. If you have comments on the format of the standard, please share them with us.**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**STD Commenter Information (For Individual Commenters)**

Name            Bob Burkard  
Organization    NCMPA1  
Industry Segment # 3,4,5  
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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments:

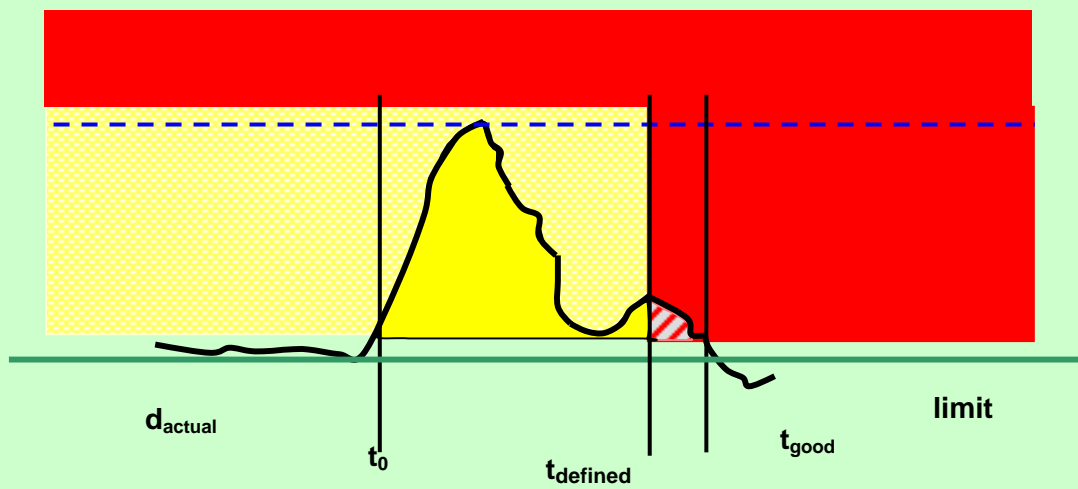
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

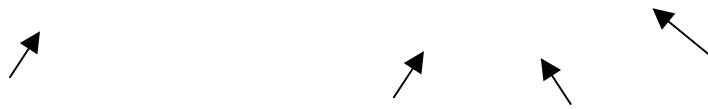
No

Comments:



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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

Yes

No

**Comments:** The graph needs additional information – axis label, d, etc.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

Yes

No

**Comments:**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

N/A

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### **Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### **Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### **16. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### **17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** Other than the comments above

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**

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**STD Commenter Information (For Individual Commenters)**

Name Gregory Campoli  
Organization New York Independent System Operator  
Industry Segment # 2  
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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities



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**Do you agree?**

Yes

No

**Comments:** It is difficult to assess compliance if you are not specific with the type of assessment and the time frame that needs to be address. For each case where a reliability analysis is required for compliance, a specific reference to real time or operational analysis needs to be defined. The references to real time analysis is not adequate, a better definition is required.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** This issue is unclear. It is not clear in the Standard as to the nature of the data required. Is this data static, telemetered or modeling data. We are interpreting one requirement to mean that the RA will identify that data collected and provided for reliability analysis. This is not to say the an RA may request data on an as needed bases to perform the reliability analysis. Where is the role of the Compliance Monitor defined?

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

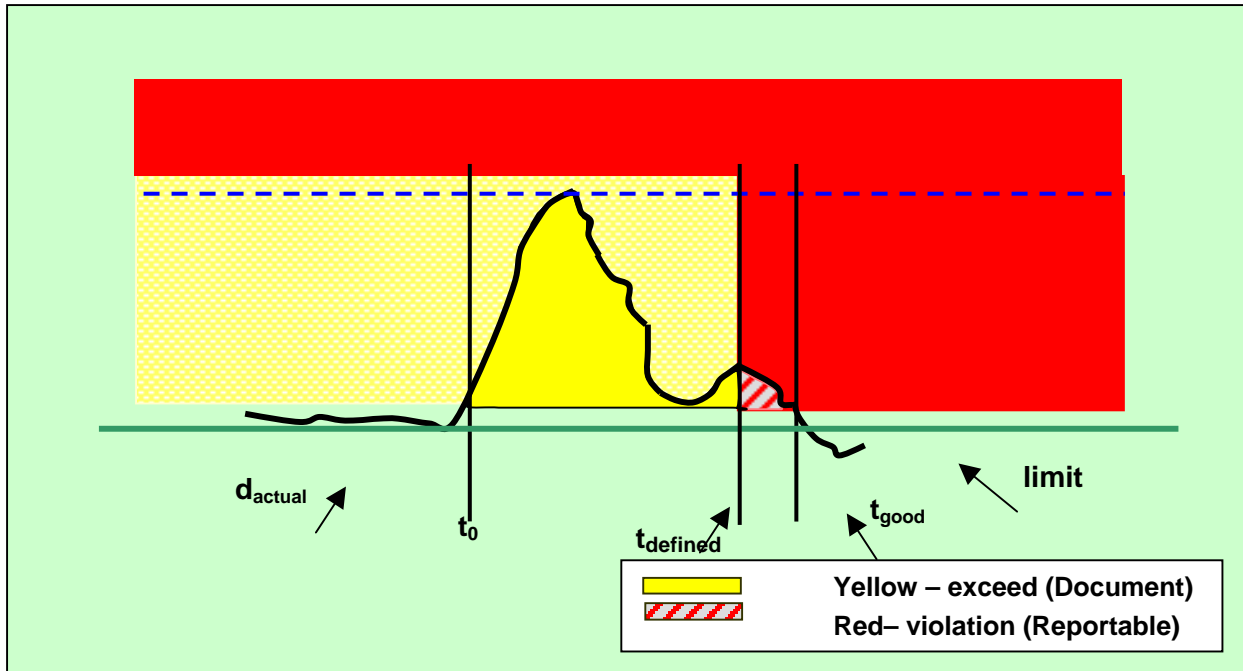
**Do you agree?**

Yes

No

**Comments:** It is not clear who defines the "Industry Accepted Format". It should state that the Industry accepted format should be a mutually agreed upon format defined by the individuals that are exchanging data. This format must not be prescriptive.

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** Responses to this portion of the standard should be delayed until a response is provided by the NERC Operating Limit Definition TF.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** Responses to this portion of the standard should be delayed until a response is provided by the NERC Operating Limit Definition TF.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Real Time Data**

**Self Certification**

**Operational Analysis**

**Planning Analysis**

**Real Time Analysis**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**BA**

**TOP**

**Generator**

**Planning Authority**

**Comments The RA should be able to cross check data used by the Planning Authority with current data provided by the Generator.**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**RA**

**BA**

**Generator**

**Planning Authority**

**Comments The TOP should be able to cross check data used by the Planning Authority with current data provided by the Generator.**

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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** The RA's ability to monitor system operating limits is not limited by actual real time data. A better definition or a better term needs to be considered for actual real time data.

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels of non compliance should not be measured by availability of telemetered data. Levels of non compliance should be focused on the ability to monitor current system operating limits and system conditions. In some cases substitute data should be acceptable.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** It is unclear by this requirement alone, who has jurisdiction for monitoring Operating Limits RA or TOP. The TOP's ability to monitor system operating limits is not limited by actual real time data. A better definition or a better term needs to be considered for actual real time data.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels of non compliance should not be measured by availability of telemetered data. Levels of non compliance should be focused on the ability to monitor current system operating limits and system conditions.



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** The reference to notification of Compliance Monitor should not be specific to this or any other standard and should be centralized in a compliance document. There also needs to be a clear distinction between data for modeling reliability analysis and data for real time system monitoring.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**No**

**Comments:** The compliance levels do not meet the intent of the requirement. The levels of compliance should focus on the RA maintenance of a valid system model representation and the collection of real time data.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** The reference to notification of Compliance Monitor should not be specific to the standard and should be centralized in a compliance document. There also needs to be a clear distinction between data for modeling reliability analysis and for real time monitoring.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** The compliance levels do not meet the intent of the requirement. The levels of compliance should focus on the TOP's maintenance of a valid model representation and the collection of real time data.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement is unclear. There is confusion as to the type of data required. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities for planning studies.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** premature to define levels of non compliance

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operation planning. This does not work for data being provided for the first time from new facilities such as engineering data.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It is premature to develop compliance levels at this time.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes  
 No

**Comments:** This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities such as engineering data.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** It is premature to develop compliance levels at this time.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities such as engineering data.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It is premature to develop compliance levels at this time.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities such as engineering data.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It is premature to develop compliance levels at this time.



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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** There is insufficient detail in measuring compliance with this requirement. This requirement identifies both operational analysis and real time analysis which implies various time frames for assessment.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** This does not capture the wide range of possible risks associated with not meeting the intent of this requirement.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** There is insufficient detail in measuring compliance with this requirement. This requirement identifies both operational analysis and real time analysis which implies various time frames for assessment.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** This does not capture the wide range of possible risks associated with not meeting the intent of this requirement.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** The reference "to prevent" is related to real time monitoring and "mitigate" is related to operational planning analysis ? These requirements should be made clear.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** It is premature to develop compliance levels at this time.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** The reference to prevent is related to real time monitoring and mitigate is related to operational planning analysis ? These requirements should be made clear.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It is premature to develop compliance levels at this time.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** We are unclear as to who should be approving a mitigation plan. Procedures should be identified that include mitigation plans. The requirement should be changed to reference procedures not mitigation plans.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It is premature to develop compliance levels at this time.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** We are unclear as to who should be approving a mitigation plan. Procedures should be identified that includes mitigation plans. The requirement should be changed to reference procedures not mitigation plans.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It is premature to develop compliance levels at this time.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** This requirement needs to be developed following the work of the NERC OLD TF.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** It is premature to develop compliance levels at this time.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement needs to be developed following the work of the NERC OLD TF.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** It is premature to develop compliance levels at this time.



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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** It is difficult to assess what additional requirements should be captured in this standard without a full compliment of standards to review.

**If yes, please identify what you feel should be added.**

**Our overall concern is that this that a) requirements for real time analysis and operational analysis need to be defined independently, b) requirements for real time data and modeling data need to be defined independently and c) levels compliance should only be determined once the requirement has been well defined and agreed to.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

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<b>STD Commenter Information (For Individual Commenters)</b>
Name
Organization
Industry Segment #
Telephone
E-mail

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Southern Company Transmission		<b>Group Chair:</b> <i>Todd Lucas</i> <b>Chair Phone:</b> 404-506-3564 <b>Chair Email:</b> telucas@southernco.com
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Chris Wakefield</i>	<i>Southern Co</i>	<i>1</i>
<i>Todd Lucas</i>	<i>Southern Co</i>	<i>1</i>
<i>Joe Payne</i>	<i>Mississippi Power Company</i>	<i>1</i>
<i>Travis Koval</i>	<i>Southern Co</i>	<i>1</i>
<i>Bill Pope</i>	<i>Gulf Power Company</i>	<i>1</i>
<i>Brian Mitchell</i>	<i>Southern Co</i>	<i>1</i>
<i>Mike Miller</i>	<i>Southern Co</i>	<i>1</i>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

Any entity that is operating or has functional control of a transmission system should be required to have offline as well as real time analysis tools.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

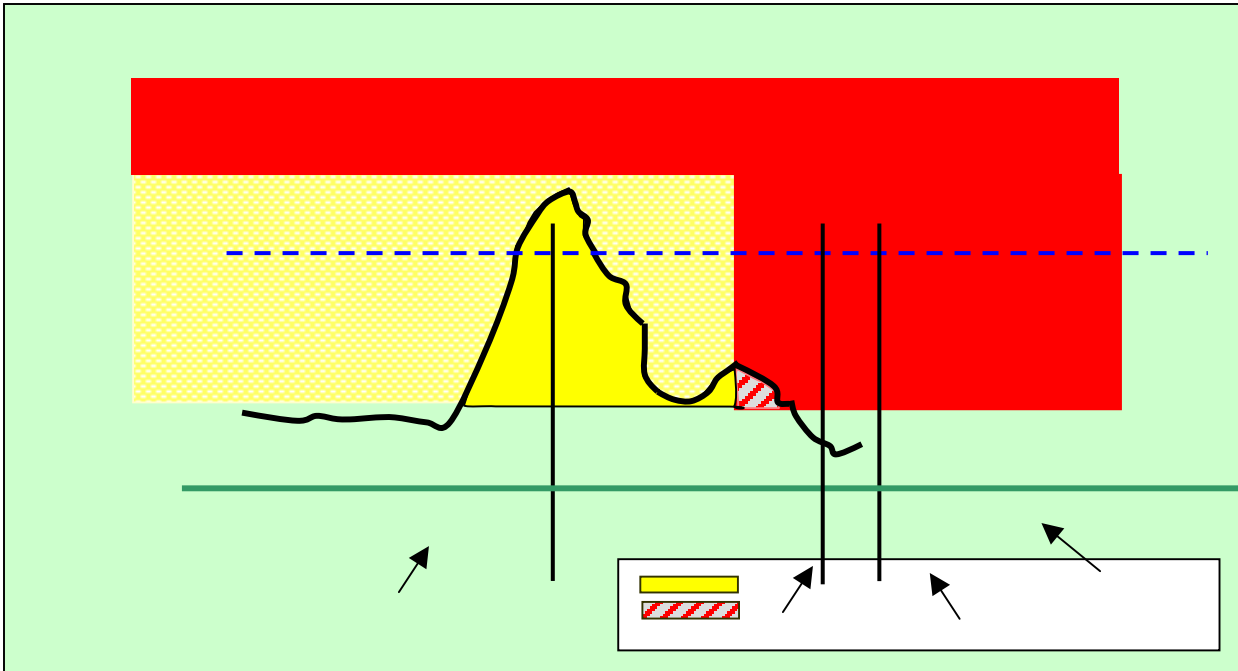
**Do you agree?**

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Yes

No

**Comments:** Agree as long as this does not lead to a new industry accepted format or a change in the currently accepted formats currently used for data exchange.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** The results from the OLDTF may create the need to review this.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** Operating in such a manner that instability, uncontrolled separation, or

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**cascading outages will not occur to more than a localized area is a non-reportable OSLV**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Non-reportable Operating Security Limit Violation**

**Reportable Operating Security Limit Violation**

**If possible, please provide us with a definition for each of these terms.**

Non-Reportable OSLV: Operating outside the thermal, voltage, or stability criteria that defines the Operating Security Limit, but operating such that instability, uncontrolled separation, or cascading outages will not occur to more than a localized area as a result of the most severe single contingency.

Reportable OSLV : Operating outside the thermal, voltage, or stability criteria that defines the Operating Security Limit, such that instability, uncontrolled separation, or cascading outages could occur to a widespread area as a result of the most severe single contingency.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** Measures should be based on the RA's ability to monitor the appropriate data and operating limits, not necessarily the availability of telemetry data. What does the term "Actual" imply in reference to real time data?

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** The levels of non-compliance should be based on whether you have sufficient and appropriate data regardless of the means for gathering the data to compare and evaluate conditions in terms of operating limits and are you monitoring that data.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Measures should be based on the TOP's ability to monitor the appropriate data and operating limits, not necessarily the availability of telemetry data.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The levels of non-compliance should be based on whether you have sufficient and appropriate data regardless of the means for gathering the data to compare and evaluate conditions in terms of operating limits and are you monitoring that data.



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Regardless of format, either the RA receives the specified data or not.

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** Data coordination between the RA & TOP should be required also.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Regardless of format, the TOP receives the specified data or not

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** A seven day lead time may not, in many cases, be sufficient lead time to incorporate new facilities or changes to existing facilities in models or perform revised analysis. There should also be a requirement to provide data in real time with measures related to timeliness and accuracy.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The RA should be required to cooperate with entities requesting data and should provide the "agreed upon" data in a timely manner. The RA should not be required to blindly provide data without an understanding of the need.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** See comments for #18.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Until numbers 18 and 20 are resolved the levels of non-compliance cannot be determined.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes  
 No

**Comments:** See# 18 comments. Also, is this requirement #7 necessary? What facilities, (lines, generators, etc.), will an Interchange Authority have that requires energization?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Until numbers 18, 20, & 22 are resolved the levels of non-compliance cannot be determined.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** See #18 comments.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Until numbers 18, 20, 22 & 24 are resolved the levels of non-compliance cannot be determined.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** See #18 comments.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Until numbers 18, 20, 22, 24, & 26 are resolved the levels of non-compliance cannot be determined

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes  
 No

**Comments:** The RA itself cannot take direct action to prevent/mitigate potential problems. The requirement should be that the RA notify the responsible parties that can take direct action.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** The levels of compliance should be tailored to the requirement for notification by the RA to prevent/mitigate OSLVs and/or instability, uncontrolled cascading, etc.

Consideration should be given to combining requirements 12 & 14.

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** Need to clarify how conflicting results from an RAs analysis vs. the TOPs analysis will be resolved

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

### **Comments:**

Need to clarify the difference between “limit violations” and “violations”. Non compliance should be structured around OSLVs.

Clarification is needed for “no action”. There may be cases where taking no action is the appropriate response

How will compliance be monitored for cases where no violations occur?

Consideration should be given to combining requirements 13 & 15.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Need clarification of the responsibilities. Mitigation plans are the joint responsibility of the RA, TOP, & TO and should be jointly developed

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 36 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Need clarification of the responsibilities. Mitigation plans are the joint responsibility of the RA, TOP, & TO and should be jointly developed

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### **Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### **40. Do you agree with this requirement?**

Yes

No

**Comments:** Agree assuming reporting requirements are commensurate with comments for question 6 & 7.

### **Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### **41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments for question 6, 7, & 40.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** See comment for #40

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments for #40.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**There are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**1) The OLDTF has definitions that need to be considered prior to finalizing this standard.**

**2) Operating limits should not be tied to equipment ratings violations.**

**3) Confidentiality of data needs to be addressed. Transmission line flows and generator outputs have commercial implications in real-time market-based systems. The Standard should recognize this concern.**

**4) The standard should incorporate requirements to provide “real time” data as indicated in earlier comments.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**General Comments: An adequate review of any of the standards requires a significant effort. A 30 day comment period does not allow for appropriate review and well thought out feedback.**



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**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

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**STD Commenter Information (For Individual Commenters)**

Name Darrel W. Richardson  
Organization Illinois Power Company  
Industry Segment # 1 & 3  
Telephone 217/424-6536  
E-mail darrel\_richardson@illinoispower.com

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

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STD Commenter Information (For Groups Submitting Group Comments)		
Name of Group:	Group Chair: Chair Phone: Chair Email:	
List of Group Participants that Support These Comments:		
Name	Company	Industry Segment #

1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?

Yes  
 No

Comments:

2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.

Do you agree?

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Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

Comments: We agree as long as "other changes" includes day-to-day significant changes to the bulk transmission system.

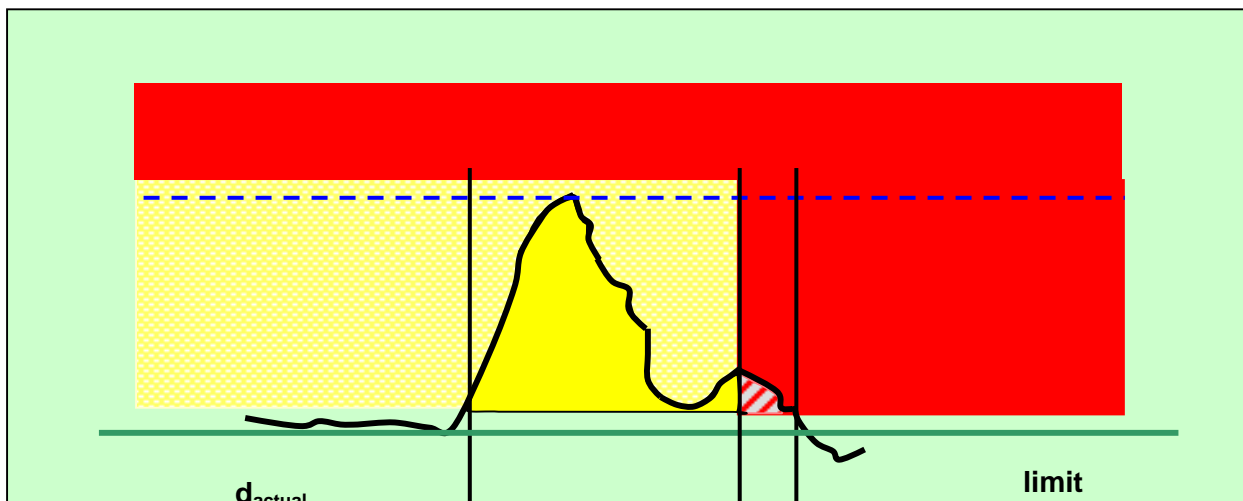
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

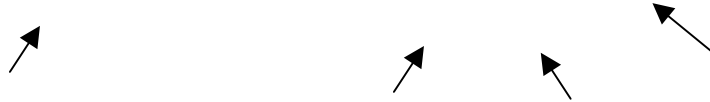
No

Comments: We agree as long as the term "generally accepted" implies that the format is specific but that the acceptance is by the majority of the industry.



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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

**Yes**

**No**

**Comments:**

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

**Yes**

**No**

**Comments:**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA**
- TOP**
- Generator**
- Planning Authority**

**Comments Although we checked both the BA and the Generator as possible sources, we feel that the information provided to the RA should be supplied by the Generator with a carbon to the BA.**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA**
- BA**
- Generator**
- Planning Authority**

**Comments Same comment as for number 8.**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** However, this only addresses non-compliance on the part of the RA. There

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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should be a similar non-compliance penalty that would apply to those to whom the request is made. Requirements 6, 7, 8 and 9 do not parallel entities responsibility to provide information on a day-to-day basis.

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** However, this only addresses non-compliance on the part of the TOP. There should be a similar non-compliance penalty that would apply to those to whom the request is

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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made. Requirements 6, 7, 8 and 9 do not parallel entities responsibility to provide information on a day-to-day basis.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We agree with the levels, however we are curious as to the difference between Level 2 and Level 3. If these mean the same, then one should be eliminated. Perhaps there should be a definition of both a "limit violation" and "violation".

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We agree with the levels, however we are curious as to the difference between Level 2 and Level 3. If these mean the same, then one should be eliminated. Perhaps there should be a definition of both a "limit violation" and "violation".

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### **Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

### **Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

### **Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **36. Do you agree with this requirement?**

Yes

No

**Comments:** However, because of varying system usages and configurations the entity should not be in non-compliance if the mitigation plan is not entirely prescriptive. The mitigation plan may point to a range of actions that could be taken to resolve given problems.

### **Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

### **37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** However, because of varying system usages and configurations the entity should not be in non-compliance if the mitigation plan is not entirely prescriptive. The mitigation plan may point to a range of actions that could be taken to resolve given problems.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** The requirement of "within 72 hours" seems to be rather quick.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** Throughout this SAR, the requirements of the RA and TOP have been pretty much mirrored. However this one seems to be very vague. To some degree Requirement 17 should parallel Requirement 16.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** However, the term "documentation" needs to be better defined since this Requirement is so vague.



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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** We really do not have a preference. We can operate with either form.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**



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1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?

Yes

No

Comments:

2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.

Do you agree?

Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this "base data" that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

**Comments:** This assumption will not minimize unnecessary documentation. To be able to measure, one would have to identify the "Base Data" in order to determine what has changed. There will need to be documentation on the Base Data as well. The Standard should not assume some required Data is monitored or measured outside the Standard.

4. The draft standard uses the term "Industry Accepted Format" to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

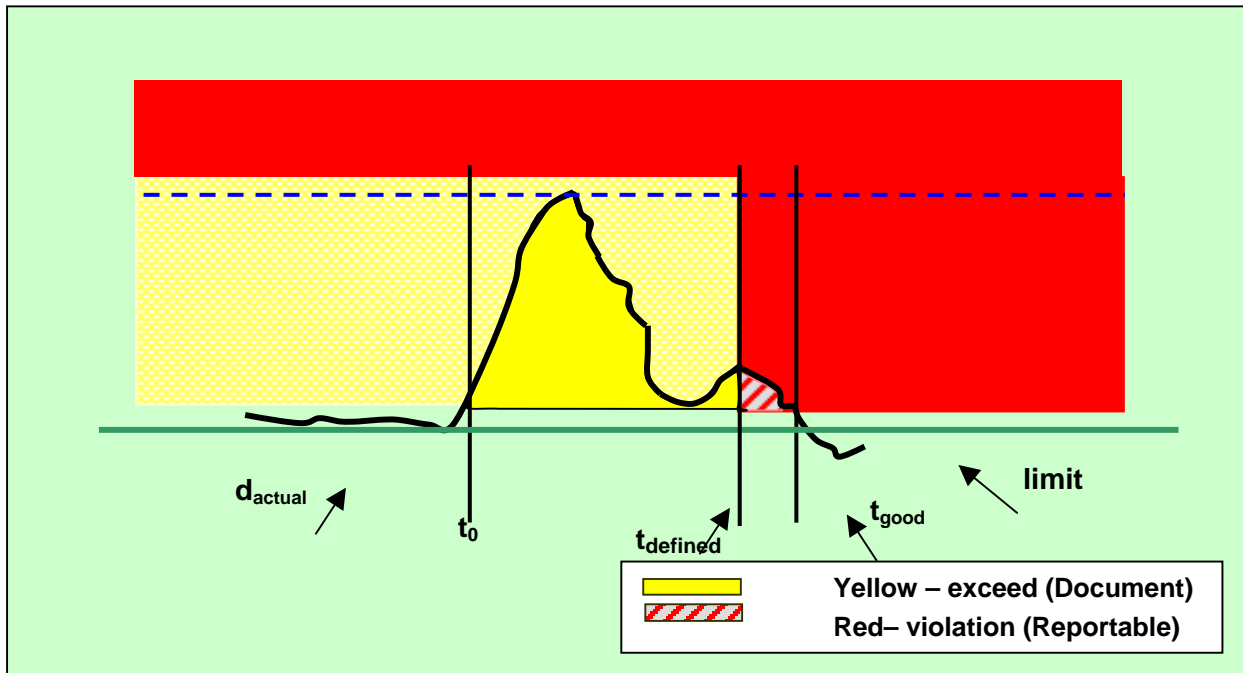
Do you agree?

Yes

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No

Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

Comments:

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

Comments:

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### **Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### **Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### **Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### **14. Do you agree with this requirement?**

Yes

No

**Comments:** This Requirement should define all data required, not just changes.

### **Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### **15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses



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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** This Requirement should define all data required, not just changes.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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### **Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

### **Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

### **Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

### **18. Do you agree with this requirement?**

Yes

No

**Comments: Concern:** If this is real-time operational data, the communication links may take 30-90 days to establish. Requirement #3 and Requirement #4 require RA and TOP to request specific data requirements. This must be timely to achieve this Requirement #5.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

### **19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The RA/TOP should already have all required data as stated in Requirement #3 and Requirement #4.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** The RA/TOP should already have all required data as stated in Requirement #3 and Requirement #4.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** The RA/TOP should already have all required data as stated in Requirement #3 and Requirement #4.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The RA/TOP should already have all required data as stated in Requirement #3 and Requirement #4.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** #2 should state that a system operating limit was exceeded, but no violation. #3 should state that a system operating limit violation occurred.

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:**

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** #2 should state that a system operating limit was exceeded, but no violation. #3 should state that a system operating limit violation occurred.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Should read: To prevent or mitigate system operating limit violations.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Should read: To prevent or mitigate system operating limit violations.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** Would be good to expand Measure #1 to include an annual summary report that identifies all limit exceedences, duration and number of events.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

Need to define when operations transfer to "Abnormal and Emergency" Standard Requirements.

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

**48. Please list any other comments you may have in the space below.**

**Comments:**





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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:**

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** My understanding of the process is that for a RA or TOP to be certified they would need to demonstrate among other things that they already have the required “base” data. Thus this standard only covers changes/new additions. However, the standard does not define what is existing. Included in the standard should be a definition of existing facilities. It is recommended that the following or something similar be added to clearly define existing facilities. “Facilities that are already energized as of the day the standard is approved or the date the RA or TOP is certified are considered existing facilities.”

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

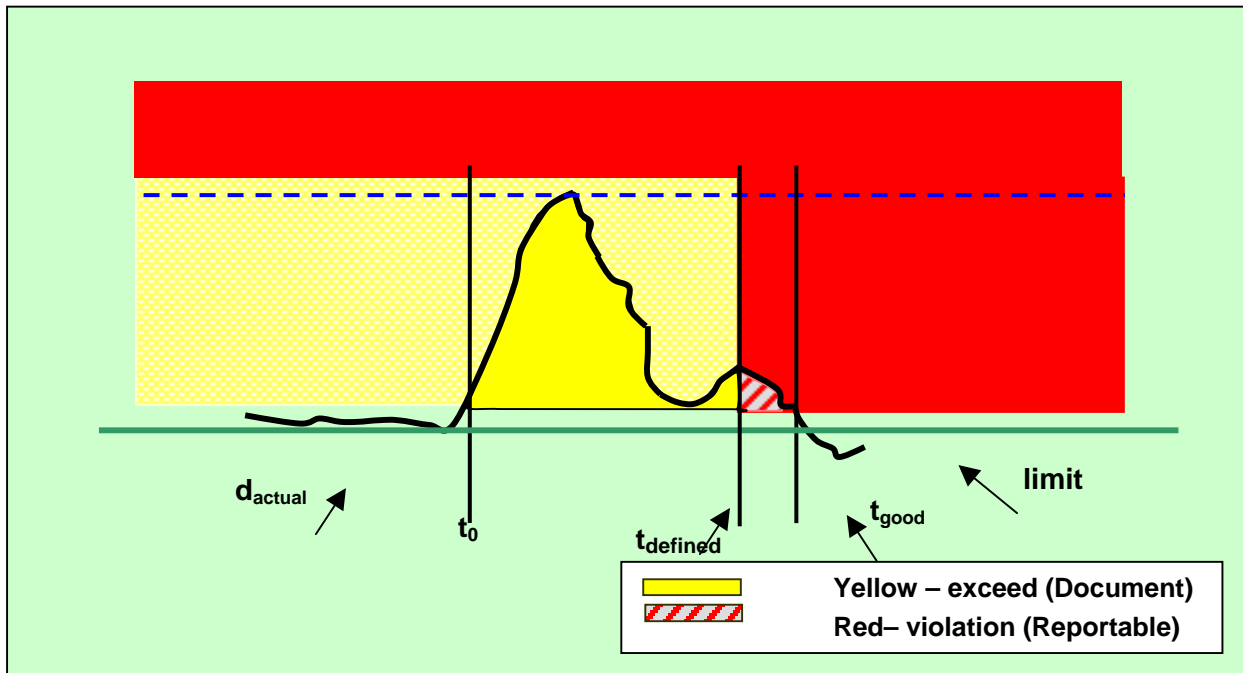
**Do you agree?**

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X  Yes

No

Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** The graph is not clear and does not define whether a normal or emergency operating limit is exceeded. The graph appears to indicate that the loading on a line is not a reportable violation if the load is reduced to the normal or acceptable level within a defined period of time. If the loading on the line is within the yellow range because of normal flows on an intact system and the next single contingency causes the loading to increase to a level that causes instability, uncontrolled separation or cascading outages then I would consider operation within the yellow zone a reportable violation.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

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Yes

No

**Comments:**

**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

See comments on question 3.

If possible, please provide us with a definition for each of these terms.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

X Generator

Planning Authority

**Comments** There should only be a single area responsible for maintaining data necessary for system analysis. The more often the same data is requested by multiple entities the more likely errors can occur. Also, the more often data is passed from entity to entity the more often errors can also occur. I would recommend that the RA be the central location for all data. All requests for data should go to the RA who would provide all responses.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

X RA

BA

Generator

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**Planning Authority**

**Comments** See question 8.

**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

X  **Yes**

**No**

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

X  **Yes**

**No**

**Comments:**

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (Bas), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** The "data" that is to be requested is not defined. As part of this standard one should be able to initially define a handful of key data elements that are required. These key elements would include the minimum information required to support reliability analyses. See question 47 for additional comments.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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No

**Comments:** Without certain data the RA cannot perform one of its primary functions, that of reliability analysis. I would support a level 4 non-compliance if the RA does not request these key items.

**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:** See comments on question 14.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** See comments on question 15.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes  
 No

**Comments:** See comments on question 26.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** See comments on question 27.



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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** See comments on question 26.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments on question 27.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** See comments on question 26.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments on question 27.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** See comments on question 26.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments on question 27.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The standard does not spell out the "data" required. There are certain key items which at a minimum are necessary to perform reliability analysis. These should be enumerated and a part of this standard. See further comments in questions 14 and 47.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There is only 1 level of non-compliance, level 4 and no definition of the data required. If certain key items of "data" were defined as part of the standard and they were not provided, a level 4 non-compliance would be appropriate. If these items were provided, however they were only provided 2 days before energization a level 3 non-compliance might be appropriate. Similarly, if the data on the key items were provided 3 to 7 days before energization a level 2 non-compliance might be appropriate. See further comments in question 47.

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** There are two portions of the bulk transmission system that must be analyzed for reliable operation. One is the portion that involves inter-regional or major regional areas and the other involves sub-regional or more localized areas. Having one entity trying to address both could result in items being overlooked. The RA should be responsible for the overall regional and interregional system. The TOP should be responsible for the sub-regional and local system which generally consists of the system operating at less than 200 kV.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Of major concern is the case where a critical element has been forced out of service. Having the reliability analysis not run within 24 hours is not acceptable under these conditions. The real time system should not have to run "blind" for more than 24 hours. This should be classified as level 4 non-compliance. Also levels 1 & 2 should be classified as levels 2 & 3.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** See comments on question 28.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments on question 29.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level 4 as presently defined indicates that instability, uncontrolled separation or cascading outages have already occurred. This might be akin to locking the barn after the horse is out. We should be a level 4 if the potential exists, not after it happened.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments on question 33.



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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

The standard refers to "data" which is to be requested or provided. However what constitutes this data is vaguely defined or undefined. Certain key items which constitute part of this data need definition either as part of the initial issuance of this standard or as part of the next revision. See comments in question 47.

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** Version B collects all the requirements for each entity in one location. Version A is could result in an entity accidentally overlooking a requirement since they have several sections in which to look.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** Other standards organizations include a table of contents as part of the standard. This standard should also include a table of contents.

In section 201 (a) Requirement, each item should be identified by a number and this number should be correlated with the other subsections of 201. For example, the first requirement (a) covers monitoring and under (b) Measures the monitoring requirements should all be grouped together and

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assigned the same number as the requirements. Similarly, the second item under requirements (a) data collection and specification should be listed as item two under (b) Measures. [In this draft it is number three] This format should be continued for subsections (c), (d), (e), (f) and (g). Note that under (d) Regional Differences the same comment could apply to all the requirements.

The fourth item in Section 201 (a) covers notification of the Compliance Monitor when data is not provided. In the long form of this standard, this item is included as part of the data specification and collection. This item should be combined with the second item in this section. Similarly, the third item should be combined with the second item.

Version B combines most of the RA requirements in Section 201, however the requirements for a mitigation plan and for documentation of instances of exceeding limits are still in separate sections 203 and 205. For consistency in combining all RA requirements together sections 203 and 205 should be combined into section 201. This same comment also applies to TOPs.

Sections 208 to 211 cover the responsibilities of Balancing Authorities, Interchange Authorities, Transmission Owners and Generator Owners to supply data covering new facilities or modifications to existing facilities. Sections 207 covers the same requirements for the Reliability Authority to provide data to associated (adjacent) Reliability Authorities and/or Transmission Operators. Although it is beneficial to keep these sections on data together, it is not consistent with the goal of keeping all the requirements for each entity together in one section.

This standard requires generator owners to supply data as requested to the requesting RA or TOP no less than 7 days prior to energization of new facilities or changes to existing facilities with a level 4 non-compliance if this data is not provided. This is not acceptable. The standard does not spell out the data required, it is left up to the RA or TOP to determine. Some data such as winter ratings is not crucial to system operation and associated level 4 non-compliance along with the sanctions for this level of non-compliance is simply not appropriate. What may be acceptable is to classify non-compliance with this standard as written as level 1. A future revision to this standard including an itemized listing of the specified data could then be developed along with appropriate levels of non-compliance. For example, generator data for dynamic stability provided between 5 and 7 days before energization could be given a level 1 non-compliance.

I also noted several typo's in the section numbers.

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STD Commenter Information (For Individual Commenters)	
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Key to Industry Segment #'s:
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

STD Commenter Information (For Groups Submitting Group Comments)		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
List of Group Participants that Support These Comments:		
Name	Company	Industry Segment #
	<i>Duke</i>	

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**1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** The the term "data" should be explicitly defined and quantified. Consideration should be given to establishing a minimum performance or accuracy and frequency criteria for the "calculated values" and accuracy and frequency criteria of telemetered data values. Footnotes should be repeated at least once for each requirement to remind the reader of the definition.

**2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

1) What is the scope of the term "real time"? The footnote appearing on pg.1 of Version A defines "real time" but it is still not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to "real-time" conceptually imply data, or processes, or both?

2) What is the definition and scope of "operational planning analysis"?

3) Why isn't there a standard for the TOP to provide telemetered data? There should be some type of performance standard established to assess the accuracy of telemetered data.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this "base data" that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:**

1) The data assumptions and the intent of this question are not clearly stated

2) The certification process for the RA/TOP is not the proper means to obtain correct modeling data. It may be appropriate for real-time metering data, but much of the static data for system modelling



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and analysis is the same as the planning function. It should be consistent with those modelling requirements also.

3) All assumptions should be listed in the Standard's document.

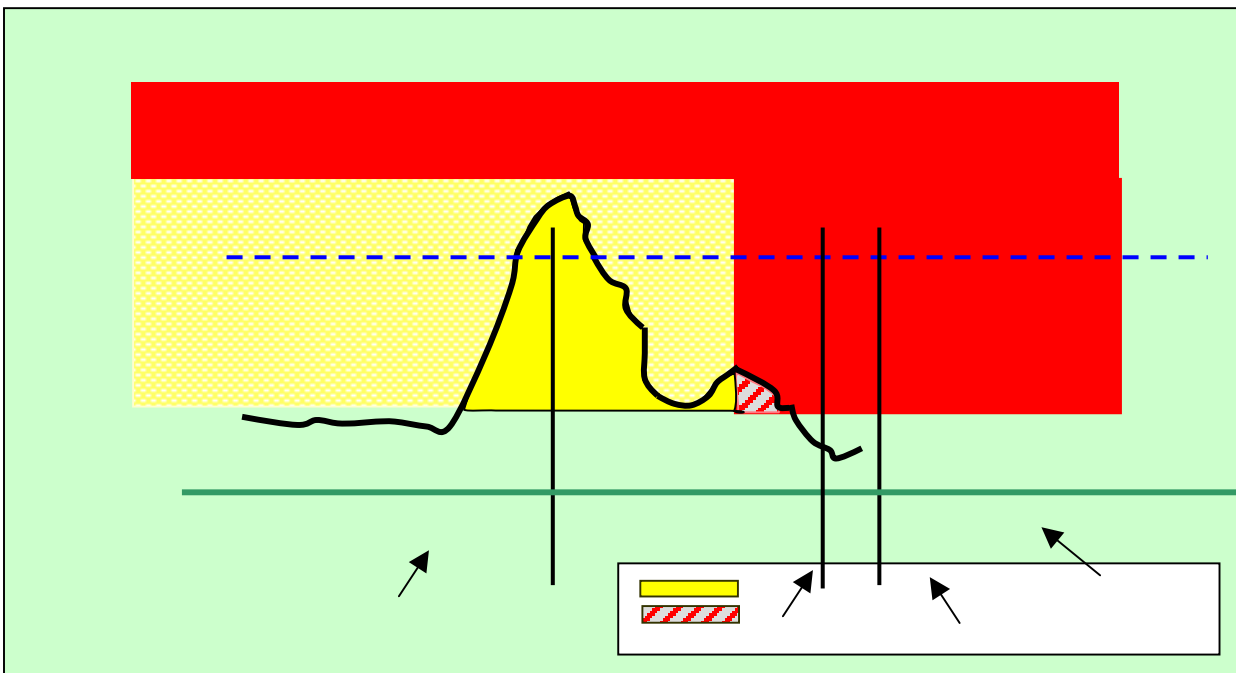
4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

Do you agree?

Yes

No

**Comments:** ...as long as this does not lead to the creation of another "industry accepted format" or require a significant change from the way data has routinely been exchanged in the past. (typically using PSS/e or PSLF powerflow raw-data formats for representational data, etc.)



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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

Yes

No

**Comments:** Wait until the OLDTF work is complete.

**6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?**

Yes

No

**Comments:** Wait until the OLDTF work is complete.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

Real Time

Self-Certification

Instability

Cascading Outages

Uncontrolled Separation

Actual telemetered data, or real-time data?

Real-Time Monitoring

Frequency of Real-Time Monitoring

System Operator Limits

Equipment Ratings

**If possible, please provide us with a definition for each of these terms.**

For TOPs, system operating limits should not only include those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation, but also local operating limits. This is a major issue in terms of the scope. As conceived, this standard does not result in any entity assuring that the bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

**Comments** The term generator needs to clearly specify that entity responsible for the generator resources. The real-time generator data should be provided by the generator to the TOP and RA; modeling data should be provided by the generator to the PA and RA.

**9. Who should provide the TOP with generation data needed for system analyses? (This**

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data consists of the generator operational characteristics.)

Please check all that apply.

RA

BA

Generator

Planning Authority

**Comments** 1) What do you mean by "system analysis"?

2) What type of "system analysis" is the TOP supposed to perform?

3) Are you referring to Generator Owner or Generator Operator or both above?

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** 1) What is the data provider's responsibility regarding provision of data to RA? Is the RA subject to non-compliance if the data provider's tools fail?

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** 1) Levels 1 and 2 imply that use of substitute data is unacceptable.

2) The only important level of non-compliance listed above is level 4.

3) There seems to be no penalty for failing to identify a System Operating Limit. If an entity identifies limits and then does not monitor them, then the entity is subject to a greater penalty than an entity who fails to identify the limits. Need a process to identify SOLs and to assess system conditions, both real-time and forecast. The measures should be: a) do you have the data; b) do you have the limits; c) are you monitoring the data.

4) What does "surrogate value" mean? Levels 1 and 2 should be rewritten to consider the suggested measures listed in these comments.

5) Loss of telemetry for short periods is an unfortunate but routine matter - with all that telemetry equipment in the field, it cannot be expected that none of it ever have downtime.

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6) The measures and levels of non-compliance should be re-evaluated to insure the achievement of the overall objective of this requirement.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

- 1) Levels 1 and 2 imply that use of substitute data is unacceptable.
- 2) The only important level of non-compliance listed above is level 4.
- 3) Loss of telemetry for short periods is an unfortunate but routine matter - with all that telemetry equipment in the field, it cannot be expected that none of it ever have downtime.
- 4) If this requirement is changed as suggested above, then there should be some type of measures defined to capture the need for a certain level of observe-ability and accuracy of the telemetry data. The TOP should also have a list of identified limits on the SCADA system that is being monitored on a periodic basis. The TOP should also have a list of "RA assigned" Operating Security Limits identified by the RA and instructions on mitigation actions to perform if the OSL is

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reached and/or violated.



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** The collection and processing of the data requirements could be a RA data management responsibility.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** These levels of compliance need additional work. For example, the RA could incur a level 1 violation if it requested only a single data item (of 1000+ items) incorrectly. Higher levels of non-compliance should indicate that an SOL has been misidentified or violated.

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Define "associated". The language is not clear enough. For example, some might interpret the requirement to read differently than others (as follows) - A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The language is not clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data - from testing, real-time operation, engineering specifications, manufacturer's specifications, etc.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Until numbers 18 and 20 are resolved (clarification of language), the levels of non-compliance cannot be determined.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Clarification language is necessary. Same as 18, 20, 21 above.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 22.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** See 22.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 22.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Clarification language is necessary. Same as 18, 20, 21, 22 above.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 26.



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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** 1) Language needs clarification to identify the type of analysis required. Also, define the periodicity of the analysis - how often it needs to be performed.

2) The RA should ensure that this function is performed (but it would not necessarily do it itself). There should be some provision for the analysis to be performed by a third party.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** 1) Number 28 needs to be addressed before non-compliance can be determined.

2) Based on the time frames specified, the levels of non-compliance imply different compliance than the requirement does. Clarification should consider is the requirement based on real-time operating concerns, or is it based on a short-term reliability/scheduling concern?

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** There should be some provision for the analysis to be performed by a third party.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See 30.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** Change the wording from "take actions necessary" to "direct actions necessary". This requirement is actually 2 requirements - the action and documentation of the action. The requirement/measure should be separated into two separate requirements.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** What is the difference between levels 2 and 3?

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### **Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

### **Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

### **34. Do you agree with this requirement?**

Yes

No

**Comments:** 1) See 32. 2) How are conflicting results from an RAs analysis vs. the TOPs analysis to be resolved?

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

### **35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** What is the difference between levels 2 and 3?

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** 1) The use of the word "approved" needs to be clarified. Who approves the plan?

2) Since System Operating Limits are still being developed, it is premature to use this term in the requirement. The requirement should be worded in such a way that does not use the term.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 36 needs to be addressed and resolved before the levels of non-compliance can be determined..

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** See comments for question 36.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 38 needs to be addressed and resolved before the levels of non-compliance can be determined.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** Delay this requirement until the OLDTF collaborates with the SDT to define "operating limits". These new limit definitions must also go through the standards process before formal implementation.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Question 40 needs to be addressed and resolved before the levels of non-compliance can be determined.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** See 40.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Question 42 needs to be addressed and resolved before the levels of non-compliance can be determined.



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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

Standards need to be written to accommodate regulatory jurisdictions and the differences that exist between them. In certain jurisdictions, third party disaggregated functions will not be allowed, or will not be allowed to perform in the same manner as in other jurisdictions.

The work of the OLDTF has shown that there are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions. The Standard and its compliance measurements should not dictate whether a particular RA should operate in a predictive or a responsive mode (i.e., take action in advance to prevent an overload based on predictive analysis, or take steps to mitigate an actual overload only on occurrence).

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:**

**If yes, please identify what you feel should be added.**

- 1) The OLDTF has definitions that need to be considered prior to finalizing this standard.
- 2) Operating limits that should be secured should include voltage collapse transfer limits in addition to equipment ratings violations.
- 3) Confidentiality of data needs to be addressed. Transmission line flows and generator outputs have commercial implications in real-time market-based systems. The Standard should recognize this concern.

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** Version B is more clearly written than Version A and is easier to follow. Entities that are responsible for complying with this standard will find it easier to determine what is required of them for

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compliance. In addition, the levels of non-compliance are spelled out more clearly; there is less room for interpretation.

### 47. If you have comments on the format of the standard, please share them with us.

#### Comments:

1) Subtitles should be added to sectionalize the standard and a table of contents added.

2) Since all references to functions, such as, RA, BA, PA, TOP, etc. are listed in standards documents as "entities" for convenience, all NERC standards documents should contain a clarification statement explaining that the functions are not organizations and that all references to the functions should be interpreted as "entities responsible for --- function".

3) All assumptions should be listed in the standards document.

4) Footnotes of definitions should be repeated for each requirement write-up.

5) There should always be at least two levels of non-compliance defined.



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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** "Data" should include manually entered values inputed from information received from person stationed at the site to monitor equipment.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

Yes

No

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:**

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

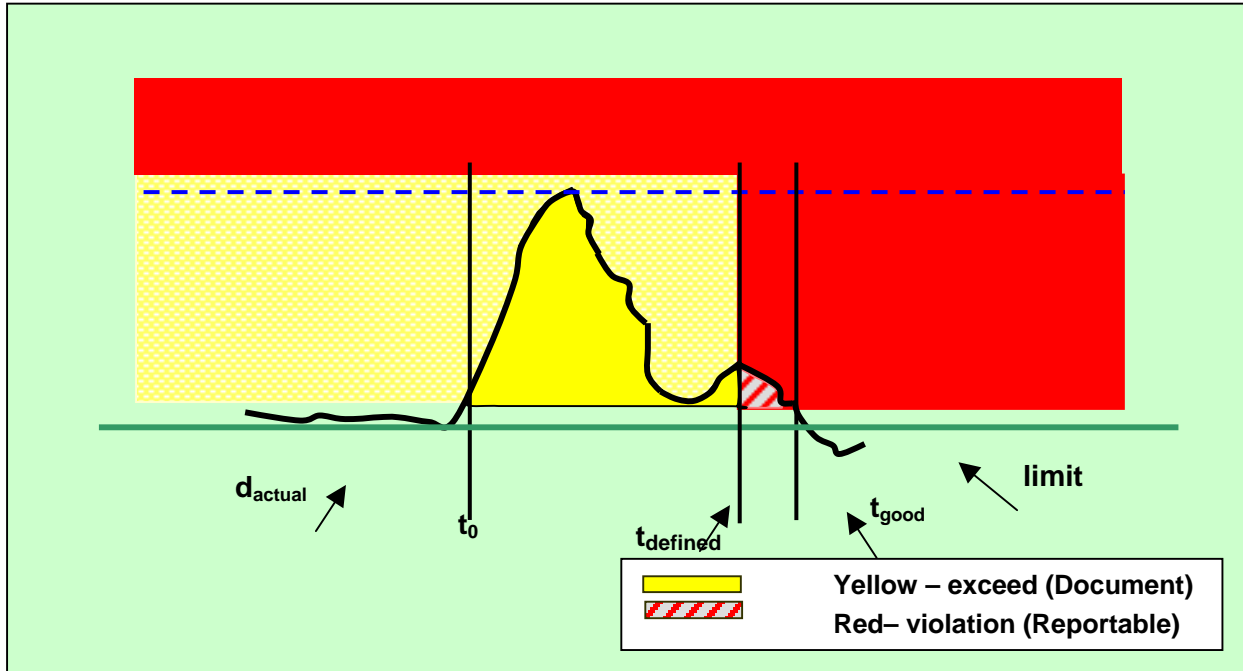
**Do you agree?**

Yes

No

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Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

- Yes  
 No

**Comments:** The visual is a good follow up to a limit violation but needs text to document what the chart is for, without these questions the chart is of little usage. Chart leaves question as to the actual exceeding of the operating limit, label placement would allow for individual interpretation, is the limit the heavy green line, the demark between the green background and the red and yellow areas?

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

- Yes  
 No

**Comments:** The red area above the yellow background area is not a violation, violation only exist after predetermined time frame above limit is exceeded,  $t_{defined}$ .

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- BA
- TOP
- Generator
- Planning Authority

**Comments Generator would be the best being they are the owners of the data. Standard however should allow for the data to be provided to a TOP and then relayed to the RA.**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

- RA
- BA
- Generator
- Planning Authority

**Comments Providing data to the TOP would allow redundancy in the communication paths to the RA.**

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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** The requirement is reversed, the actual real time data that should be monitored and compared to the system operating limits

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The levels of Non-compliance are measurements of the communication system not the actual requirement, does not allow for using surrogate values such as state estimation or manually requested values to be used without the RA being at a level of non compliance.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** First the requirement is reversed, the actual real time data that should be monitored and compared to the system operating limits. Second operating limits set in the SCADA or EMS are not commonly changed from day to day to match current.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Again the Non-compliance levels are is a monitoring of the communication system rather than a measure of how the system is being operated.



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** Defination for technically accurate data needed.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** In general I agree with the requirement. Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

- Yes
- No

**Comments:** In general I agree with the requirement. Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes
- No

**Comments:** Requirement are being duplicated between RA's and TOP's The standard should require that the realibility analysis is being done by one or the other. It should not be necessary for both to duplicate the efforts

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:**



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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Requirement are being duplicated between RA's and TOP's The standard should require that the realibility analysis is being done by one or the other. It should not be necessary for both to duplicate the efforts. The RA in our case has a much better view of the setup and transactions taking place across the grid. TOP view of the world would be very limited in comparison.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Duplicated effort of thr RA in standard 210

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** Requirement 12 and 13 duplicate activities between the RA and the TOP's. In general I agree with the requirement but only one entity should be required to fulfill requirement.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Level four as needs to be rewritten to only include action not taken on the part of the RA and exclude items outside control.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** Duplicate of requirement 12

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Needs to be rewritten to include only lack of action on the part of the TOP.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Use of mitigation plan from past similar system conditions need acceptable, new documentation need not be prepared for each new occurrence of a similar condition.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** Cannot agree without knowing the complete defination of "exceeding identified system operating limits" is.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Under some complicated conditions the 72 hours time limitation is too restrictive to investigate, and supply anything more than a preliminary report of a violation. More time could be required to investigate, compile, and supply the complete documentation of a violation.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement is too restrictive and would require maintaining a living alarm program to take into account the actual ambient temperatures, actual loading level for rating of equipment that varies by temperature changes. Many alarm levels are set at a temperature extreme and the operators compare the actual temperature and loading to the acceptable level at the given ambient temperature. Alarm files could not be used as a legitimate violation file.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**

OTHER COMMENTS: 202 (a) Requirement section. Under "The TOP shall:" the fifth bullet needs to be removed or reworded. If the bullet is not removed, a suggested wording would be: Operate within equipment ratings or system operating limits determined by the Reliability Authorities' short-term reliability analysis. (The wording change needs to reflect the fact that the TOP may not have the information that would be needed from other utilities to perform an effective bulk transmission analysis. The Reliability Authority should have the information to do such an analysis and provide the TOP with any limits.)



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Wording in 202 (b) Measures, 202 (c) Outcomes, and 202 (e) Compliance Monitoring Process and 202 (f) Levels of Non-compliance may need minor changes to reflect the change in the 202 (a) Requirement section.

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STD Commenter Information (For Individual Commenters)	
Name	John Blazekovich
Organization	Exelon Corporation
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Key to Industry Segment #'s:
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

STD Commenter Information (For Groups Submitting Group Comments)		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
Name	Company	Industry Segment #

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** With the understanding that the footnote explanations will remain in place

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

Yes

No

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** Verification of "base data" should be included/required upon request on a case by case basis to validate studies

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

**Do you agree?**

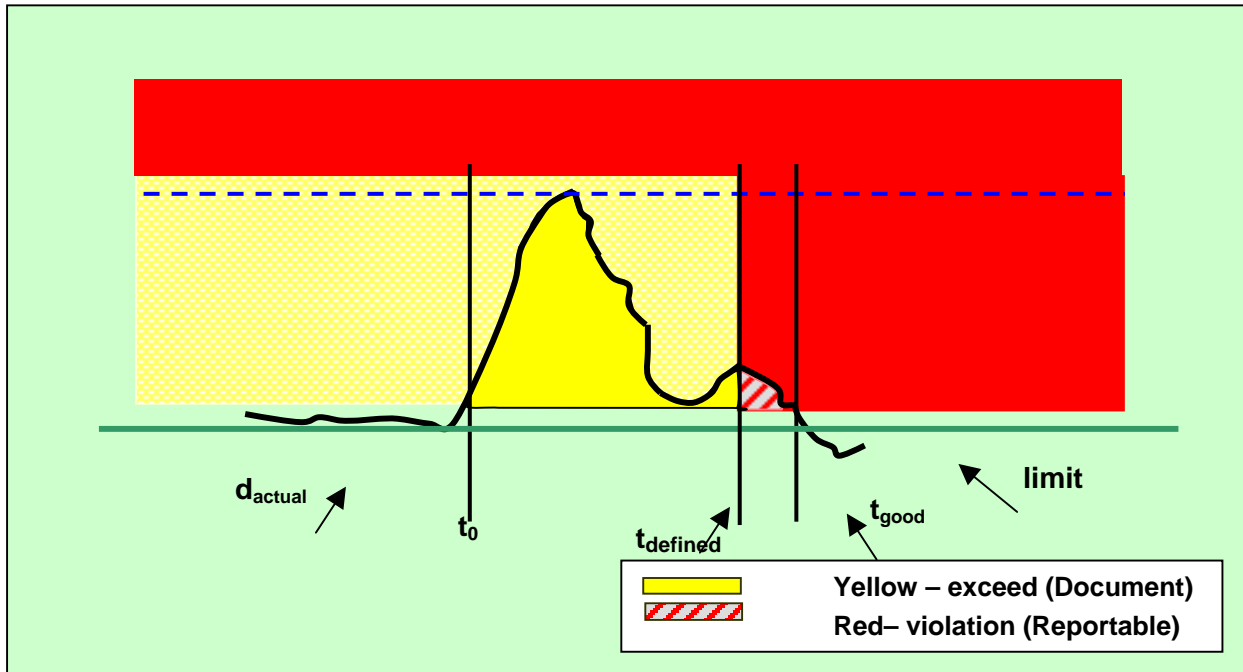
Yes

No

**Comments:** In cases where the data format is not stipulated by tariff or connection

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requirements, a mutually agreed to format be determined. In cases where parties cannot come to mutual agreement NERC should provide minimum standards.



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

- Yes
- No

**Comments:** The above graph is not clearly defined, cannot determine what kind of limit(s) are being demonstrated (thermal, stability). More clarification needed before the question can be answered.

Not sure why this is asked in this standard when one of the Explanations of Terms explains that the definitions of system operation limits and operating limit violations is being developed by the Facility Ratings SAR. Shouldn't the definition of a violation eliminate the need to ask this question?

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

- Yes
- No

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**Comments: Same as comment #5**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

"Planned for Contingencies"

**If possible, please provide us with a definition for each of these terms.**

"Planned for Contingencies" as opposed to contingencies beyond criteria need to be included in this standard. It is common practice to only run operational reliability analysis by applying the "Planned for Contingencies" to the current system configuration. By not specifically addressing "Planned for Contingencies" the standard appears to require running multiple contingencies to find the unstable operating point.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

BA

TOP

Generator

Planning Authority

Comments

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

RA

BA

Generator

Planning Authority

Comments Either entity is OK

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** We have concerns with potential effects of thermal overloads, we believe that thermal limits need to be addressed and monitored. The explanatory text in parenthesis appears to exclude thermal limits.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Should be revised to state that as long as limits are observable the RA is compliant. Level 4 needs to be clarified so that momentary telemetry problems (loss of telemetry) does not result in a level 4 violation.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** We have concerns with potential effects of thermal overloads, we believe that thermal limits need to be addressed and monitored.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Should be revised to state that as long as limits are observable the TOP is compliant.



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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level 2 "specification" needs to be clarified, is it referring to when, what or both?

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<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** Assuming data confidentiality will be addressed in future documents.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Level 1 non compliance appears to be saying that anytime errors are found and corrected the entity correcting the errors must be found non-compliant for the period before the

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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error was found. Is that the objective of this requirement?

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Estimated data that describes equipment should be provided several months in advance of energization so that operational planning studies (12 months in advance) can be performed. Estimated data is probably adequate for the equipment energization provided as-built data is provided within a reasonable amount of time. We suggest one month after energization as a reasonable time frame for providing as-built data. "Estimated" versus "as-built" data should be defined.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level of non-compliance should be tied to the impact of changes to the system. As stated the level of non-compliance is equal for major and minor changes in transmission system configuration, levels of non-compliance should recognize the difference.

Non compliance should be tied to the standard time frame for supplying data.

Data maintenance is an on-going activity, the drafting team should recognize and address data maintenance and compliance implementation.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Do not understand the need for this requirement

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** Do not understand the need for this requirement

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** Estimated data that describes equipment should be provided several months in advance of energization so that operational planning studies (12 months in advance) can be performed. Estimated data is probably adequate for the equipment energization provided as-built data is provided within a reasonable amount of time. We suggest one month after energization as a reasonable time frame for providing as-built data. "Estimated" versus "as-built" data should be defined.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level of non-compliance should be tied to the impact of changes to the system. As stated the level of non-compliance is equal for major and minor changes in transmission system configuration, levels of non-compliance should recognize the difference.

Non compliance should be tied to the standard time frame for supplying data.

Data maintenance is an on-going activity, the drafting team should recognize and address data maintenance and compliance implementation.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Estimated data that describes equipment should be provided several months in advance of energization so that operational planning studies (12 months in advance) can be performed. Estimated data is probably adequate for the equipment energization provided as-built data is provided within a reasonable amount of time. We suggest one month after energization as a reasonable time frame for providing as-built data. "Estimated" versus "as-built" data should be defined.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** Although we agree with the need for the requirement we find the wording of this requirement to be somewhat ambiguous. The wording suggests that the RA or TOP is required to run studies until a cascading outage is found. We believe that the intent should be to analyze "Planned for Contingencies" and identify problems if any are found, but the wording does not state this. The RA should develop and document their "Planned for Contingencies" and should only be required to run reliability analysis to analyze these "Planned for Contingencies".

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**



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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Although we agree with the need for the requirement we find the wording of this requirement to be somewhat ambiguous. The wording suggests that the RA or TOP is required to run studies until a cascading outage is found. We believe that the intent should be to analyze "Planned for Contingencies" and identify problems if any are found, but the wording does not state this. The RA or TOP should develop and document their "Planned for Contingencies" and should only be required to run reliability analysis to analyze these "Planned for Contingencies".

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Do not understand the difference between items 2 & 3 - clarification is needed.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** Although we agree with the need for the requirement we find the wording of this requirement to be somewhat ambiguous. The wording suggests that the RA or TOP will not take action unless instability or cascading outages are at risk. We believe that the intent should be to analyze "Planned for Contingencies" and identify problems, including equipment overloads above emergency limits, if any are found, but the wording does not state this.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Do not understand the difference between items 2 & 3 - clarification is needed.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** What entity is required to "approve" the mitigation plan?

Need to clearly state the scope of the plan required along with the level of detail required in the plan.

The outcome appears to require entities to prepare plans to address instability and uncontrolled separation only, this requirement should address "Planned for Contingencies".

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Requires better definition of violating, returning, and reset point for S.O.L.

What entity is required to "approve" the mitigation plan?

Need to clearly state the scope of the plan required along with the level of detail required in the plan.

The outcome appears to require entities to prepare plans to address instability and uncontrolled separation only, this requirement should address "Planned for Contingencies".

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:**



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**STD Commenter Information (For Individual Commenters)**

Name Peter Burke [on behalf of ATC's Dave Cullum, Dale Burmester, Francis Esselman, Paul Steinberger, Ron Stark, Harry Terhune, Jim Kleitsch]

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Industry Segment # 1

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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**  
 **No**

**Comments:** May need better definition as to what "real time" data means (4 second scans, 30 second scans, etc) as this could have an impact on other sections of the standard.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

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Yes

No

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** Agree as long as there is an acceptable definition provided during the certification studies for the required data needed for analysis. Concern that loss of any data will be seen as a violation when in fact data redundancy inherent in the system allows reliable operation of the system even with loss of some data.

The attempt to reduce the burden is appreciated.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

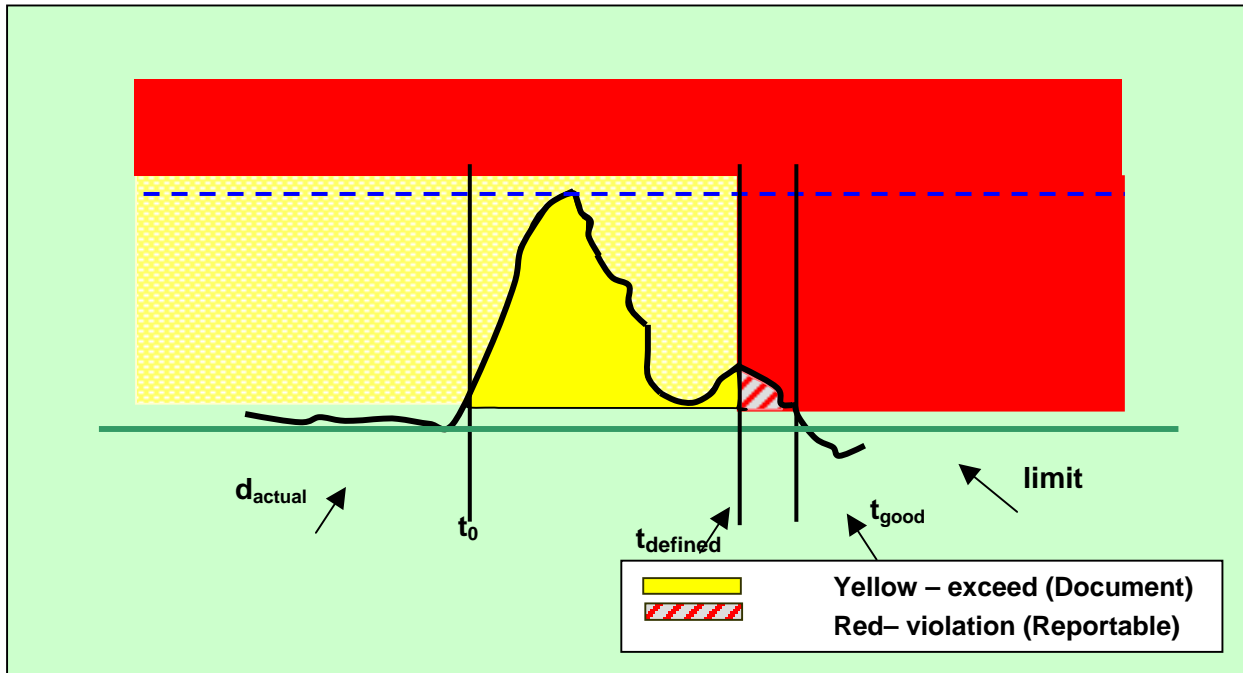
**Do you agree?**

Yes

No

**Comments:** Who will develop this "Industry Accepted Format" and what is the timeline for that development? Is there one "Industry Accepted Format" or are we at the mercy of industry giants who may want their "format" used? Is there another team working on development?

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5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** This answer is "yes" but with the qualification that committing to "yes" depends on the eventual definition of an OSL, which is not available yet and is only now being developed by a different SAR drafting team.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** Cannot agree to this without some indication of the value of "t" in the graph. If "t" is one minute then the graph does not represent a reasonable reportable violation. If "t" is thirty minutes, then the graph may represent a reasonable standard for reporting.

7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.

"Technically accurate"

"Single contingency." This standard needs to precisely define "single contingency." This standard, built on the premise of monitoring and assessing short term reliability, nowhere mentions the documentation or reporting of contingencies.

Within the Sanctions Table, how, precisely, does the enforcement entity interpret the phrase "greater of 4<sup>th</sup> consecutive period of violations?"

What are the "MW" that the fines per MW are based on? Is this the amount of MW affected or the estimated MW affected in the event of the next contingency? Can a fine be levied for the risk posed by a next contingency that threatens a large region even if the event of concern never occurs?

The section "Fixed Dollars," near the end of the standard, describes in very vague language how monetary sanctions may be adjusted. Left unsaid is who makes the adjustments, upon whose approval, and under what circumstances. The whole standard is put at risk of losing its meaning if this section is left in its current form.

It would be of value to include brief descriptions of the different functional areas, along with indication as to who does what, in the standard with a reference to the official definitions that are documented elsewhere. Such a reference would be helpful for someone not intimately involved with the standard or, particularly, the NERC Functional Model.

The use of the words "steam generator" in footnote 1 of Version B seems inconsistent with the industry accepted meaning of those words.

If possible, please provide us with a definition for each of these terms.

"Technically accurate" to the extent that the data supplied is consistent with the supplier's documented methodologies and criteria.

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**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- BA
- TOP
- Generator
- Planning Authority

Comments Generator should supply the current machine capabilities, including derating of MW or MVAR output capability.

Planning Authority should supply the full dynamics descriptions to be used in the off-line models.

All play a part in providing the proper data and depends upon the NERC Functional Model in place. Experience at ATC has shown this can be difficult with regard to keeping everyone informed and determining who is non-compliant or responsible for declaring an entity in non-compliance. ATC, especially, has had trouble keeping current on ownership of IP generators and working with the Regional Council to obtain timely generator data.

The Generator Operator/Owner should have this data and should be responsible for providing it to the RA. The Gen owner will be aware of changes to their equipment that others, including the Transmission Owner/Operator, would not be aware of. Also, from a liability standpoint, if you make someone else responsible for providing the data, what authority do they have to request it and who is liable for any costs incurred if the data is lost? In many cases, the TOP will also need the Generation data to perform their duties. In that case, it may be acceptable for the TOP to provide the data to the RA assuming all liability issues have been addressed.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

Please check all that apply.

- RA
- BA
- Generator
- Planning Authority

Comments With respect to the RA, it may be necessary to obtain this data for a unit outside TOP control when the unit has a major effect on the TOP system.

As stated above it seems the entity who owns and operates the Generator should be responsible for providing the data needed to maintain the reliability of the system. One would not want to be in a position where the data was delivered to the RA and then to the TOP as this potentially "stale" data could cause problems with the network

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applications on the EMS. (And it also introduces another point of failure in the data supply chain which increases the likelihood that the availability of the data will be less than required.

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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Yes**

**No**

**Comments:** Agree assuming the MISO would be the RA for ATC in which case this requirement expresses what MISO would be expected to be doing.

Some accommodation should be made for new facilities for which it is sometimes difficult or impractical to have immediate operation of telemetering. There should be a grace period of something like three months following new construction.

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Level 1 non-compliance is written "up to 24 hours." This suggests that anything, even a single missed scan, qualifies as non-compliance.

As worded there is a significant amount of room for interpretation as to what constitutes non-compliance. If MISO loses the ability to scan one reading from one RTU for a day, this should not be considered a violation. If an RTU is lost for a day, a decision needs to be made as to how critical the data is to reliable operations. If an entire ICCP link is lost, 10 minutes may be too long. That will most likely be a judgement call based on the data supplied via the link that is down and system conditions at the time of the failure (sunny and 65 degrees versus thunderstorms rolling through the system). This needs more work before using it to assign fines for non-compliance.



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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** I am not aware of many TOPs that have the tools needed to study voltage stability and/or transient stability for their systems in real time. MISO has these tools and is working to implement them. If the standard is implemented as written it will require a significant investment and development effort at many sites to put the necessary reliability monitoring tools in place. When done, we have duplication of effort and significant costs incurred with a limited benefit to the system.

I do believe that the TOP should be capable of monitoring its system and analyzing to make sure it can survive first contingency events and maintain operations within acceptable guidelines. This requires a functioning State Estimator, Security Screening/Contingency Analysis, and Online Power Flow.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Same as response provided for Question 11.

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** There needs to be a mechanism in place to ensure that the RA is notified when system changes are made. This addresses the problems we've seen with lack of coordination between the people building/updating/etc.. facilities and the people responsible for the reliable operation of the system.

However, there is some concern about the documentation required. The amount of documentation needed to track all of the possible changes in data may overwhelm the RA if it oversees a significant portion of the interconnection.

What is meant by "it needs" in the statement "The Reliability Authority shall specify and collect the data it needs. . .?" A standard that imposes sanctions must be more specific about what is needed.

In the statement, "The RA shall notify the Compliance Monitor. . .," there's no mention of time frame, no specification of how soon after failure the RA must notify the Compliance Monitor.

This requirement should apply to Distribution Providers (DPs) in the same way it applies to

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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BAs, IAs, Generators, TOPs, and "associated RAs."

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

### 15. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** The phrase "some data technically inaccurate or incomplete" in level 1 would not apply to the RA. It would appear from the phrase "notation" in the "Measure(s)" section that level 1 compliance would hinge on whether or not the RA notified the supplier that the data should be accurate and complete, since that is the only part they have control over.

This requirement penalizes the RA for not asking for data that it may not know it needs. For example, if a TOP energizes a new station, how is the RA supposed to know that the station exists? If the RA doesn't know, it can't request data and can't tell that it's missing. The RAs do need a standardized way of requesting and receiving updates to allow them to maintain their models in a timely manner. Not sure the penalties as defined get us there.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** My understanding of the future relationship between RA and TOP may be incorrect (I think of the MISO as the RA and ATC as the TOP). However, I think that a TOP should not and will not span multiple RAs. In addition, the RA is given the ultimate responsibility for maintaining system security.

Because of these reasons, the TOP should not be getting data from BA, IA, Generator or other TOPs. Rather, the TOP should be getting the data from the RA. So, the requirement should instead enforce that the TOP maintains an accounting of the data it receives from the RA.

The majority of the data required by the TOP will be supplied by project/construction/system protection personnel from within the TOP organization unless the TOP is responsible for operation of other transmission systems. (ATC operating ALTW for example) Will they be required to document internal correspondence required to get the data needed for monitoring? The reason for disagreeing with the requirement is that there's no incentive for the people who know about the changes to inform the TOP unless they work for the same company. If a neighboring utility adds equipment that impacts a different TOP, how does the TOP know this is happening and how does the TOP incent the other company to let the TOP know ahead of time?

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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The opening statement refers to "associated TOPs" but nowhere defines the difference between an associated TOP and any other TOP.

This requirement should apply to Distribution Providers (DPs) in the same way it applies to BAs, IAs, Generators, RAs, and "associated TOPs."

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** This requirement penalizes the TOP for not asking for data that it may not know it needs. For example, if a neighboring TOP energizes a new station, how is the TOP supposed to know that the station exists? If the affected TOP doesn't know, it can't request data and can't tell that it's missing. The RAs should be receiving this information and should be required to disseminate to parties as needed.

If this requirement is maintained as is, then the same comment made in response to question #15 applies. That is, the TOP should be non-compliant for not notifying suppliers of data that the information must be technically accurate and complete. The TOP has no control over whether or not the data supplied is accurate and complete and, therefore, level 1 compliance should be altered.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

Yes

No

**Comments:** Three concerns with this requirement:

1. TOP should not make requests, per response to question #16. Rather, the RA should make the requests and then hand that data down to the TOP.

2. This requirement and the others like it for the BA, IA, Generator and Transmission Owner (TOW) all state that the data should be supplied "as requested". That is needed but there should

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also be a requirement that RAs, IAs, BAs, Generators and TOWs should supply this information to one another, without a request, if the data has to do with major/critical facilities (i.e. an entity may not realize they should make a request.)

3. The requirement directs that data must be provided no less than 7 days in advance. Some new facilities can be significant so that 7 days in advance is not enough time for receiving data. In some cases, data for significant new facilities would be needed a season or a year in advance.

4. Estimated or approximate data should be acceptable prior to energization. "As built" data would be provided when available or when required telemetry is complete.

### **Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

### **19. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels of non-compliance would be better if defined something like:

1. Data for new/revised facilities was provided less than seven days prior to energization.
2. Data for new/revised facilities was provided before one month after but not before energization.
3. Data for new/revised facilities was provided before three months but not before one month after energization.
4. Data for new/revised facilities was not provided within three months after energization.

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** Same concerns as expressed in reply to Question 18. One entity may not know it should request information from another entity. There should also be a requirement on the entity where the change is occurring to provide that data, unrequested, to the other entities if it involves major/critical facilities.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Why do we go straight to level 4? Is it assumed that things are already working properly and that the penalty is being applied due to a lapse? If there are fines for non-compliance, are people incented to avoid paying fines by not energizing new equipment that's needed for reliability?

Levels of non-compliance would be better if defined something like:

1. Data for new/revised facilities was provided less than seven days prior to energization.
2. Data for new/revised facilities was provided before one month after but not before energization.
3. Data for new/revised facilities was provided before three months but not before one month after energization.
4. Data for new/revised facilities was not provided within three months after energization.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes
- No

**Comments:** Same responses as provided to Questions 18 & 20.

(What new facilities would an IA be placing into service?)

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Levels of non-compliance would be better if defined something like:

1. Data for new/revised facilities was provided less than seven days prior to energization.
2. Data for new/revised facilities was provided before one month after but not before energization.
3. Data for new/revised facilities was provided before three months but not before one month after energization.
4. Data for new/revised facilities was not provided within three months after energization.



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### Requirement 8:

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

### Measure(s):

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

### Outcome(s) (100% Compliance):

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

### 24. Do you agree with this requirement?

Yes

No

**Comments:** Same responses as provided to Questions 18 & 20.

Some measure needs to be in place to make sure that the RA and TOP are notified in a timely manner that system changes are planned. This would be a challenge to meet initially as the processes are not in place to make this work well now.

### Levels of Non-compliance for this Requirement:

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

### 25. Do you agree with these levels of non-compliance for this requirement?

Yes

No

**Comments:** Levels of non-compliance would be better if defined something like:

1. Data for new/revised facilities was provided less than seven days prior to energization.
2. Data for new/revised facilities was provided before one month after but not before energization.
3. Data for new/revised facilities was provided before three months but not before one month after energization.
4. Data for new/revised facilities was not provided within three months after energization.

There's no desire for penalties that dis-incent people from energizing new equipment but there's need for penalties that encourage early reporting. Not sure that 7 days will be needed once systems are in palce and incremental updates are being performed. There may also be a need for determining the impact of the facility addition to the system before determining penalties. (Should a new 200 MW generator going into service be penalized the same as a distribution tap serving 5 MWs of load? Probably not but this standard as written does not differentiate between the two.)

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** Same responses as provided to Questions 18 & 20.

Some measure needs to be in place to make sure that the RA and TOP are notified in a timely manner that system changes are planned. This would be a challenge to meet initially as the processes are not in place to make this work well now.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Levels of non-compliance would be better if defined something like:

1. Data for new/revised facilities was provided less than seven days prior to energization.
2. Data for new/revised facilities was provided before one month after but not before energization.
3. Data for new/revised facilities was provided before three months but not before one month after energization.
4. Data for new/revised facilities was not provided within three months after energization.

There's no desire for penalties that dis-incent people from energizing new equipment but there's need for penalties that encourage early reporting. Not sure that 7 days will be needed once systems are in palce and incremental updates are being performed. There may also be a need for determining the impact of the facility addition to the system before determining penalties. (Should a new 200 MW generator going into service be penalized the same as a distribution tap serving 5 MWs of load? Probably not but this standard as written does not differentiate between the two.)

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** Somehow the requirement should recognize that large scale system instability threats may not be easily or quickly identified.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The MISO Day 2 market relies on analysis tools running every 5 minutes. Not sure that 8 hours is an acceptable cutoff for level 1 non-compliance.

It is unreasonable that an analysis not running once but recovering to run in a few minutes would still be considered non-compliance. Level 1 non-compliance should allow a buffer of time for the start of the analysis, maybe 1 or 2 hours, to be compliant. The reason is that some analyses (e.g., dynamic stability) can take 1 or 2 hours to set up the appropriate cases for the analysis and have the runs completed. Level 1 non-compliance would be more reasonable if written as follows:

"Reliability analysis did not run within 1 (or 2) hour(s) of request, but ran within 8 hours."

There is some concern as to how MISO can maintain an accurate model of the system based on the size of the system MISO's required to model and the number of changes being made to this system. Another concern is how reliable the network analysis tools can be when relying on ICCP as their only data source. Some of this data may be second hand which will tend to complicate analysis.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** RA should take the lead & TOP should assist but not be held to RA standard.

Same comments as in 12. A basic analysis tool set (SE, SA, and PF) should be running at the TOP shop. The more advanced tools like voltage stability, transient stability, etc. may be better suited to the RAs.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Same as response to Question #29, subject to advice provided to Question #30.

Additionally, if system conditions are "normal," it may be acceptable to lose applications for an extended period of time (possibly 1 hour) without this being a problem. Alternatively, at some times, the loss of study tools for 10 minutes can be a disaster. A flat 8 hour cutoff may force TOPs to have applications support personnel on site around the clock which may not be necessary. Non-compliance should be defined in a way that conforms to Operator sense of urgency for the analysis tools.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** The need is clear and the TLR process is a first step in tracking these kinds of activities. This could be worded more carefully to describe "documentation" that is reasonable and applicable in the normal course of business without being open to an interpretation requiring extraordinary and unreasonable documentation.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Should entities be penalized for things that might have happened but didn't? How much faith do we place in analysis results? If an overload would have been 1% over rating and nothing happened, is that a problem. 5%? 10%? If something happens, some type of penalty/written reprimand should be issued with a lesson learned follow-up to make sure it does not happen again. Hopefully a system isn't created that discourages people from reporting problems to avoid fines and thereby miss the opportunity to analyze a problem to prevent it in the future.

Level 3 non-compliance doesn't appear to be different from level #2.

Level 4 non-compliance should forgive extraordinary and severe causes as follows:  
System operating limit violated and resulted in instability, uncontrolled separation or cascading

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outages that adversely impacted the reliability of the bulk transmission system without the influence of severe storms, sabotage, or other extraordinary conditions.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** This could be worded more carefully to describe "documentation" that is reasonable and applicable in the normal course of business without being open to an interpretation requiring extraordinary and unreasonable documentation.

There is a need for the TOP to take actions, however, the TOP should coordinate with the RA, where possible. The level of documentation should not be as rigid as that applied to the RA.

Referring to similar comments in reply to question 12, a basic analysis tool set (SE, SA, and PF) should be running at the TOP shop. The more advanced tools like voltage stability, transient stability, etc. may be better suited to the RAs. The TOP may be the primary party responsible for maintaining reliable operation of the transmission system and, as such, should document steps taken to prevent problems using the available diagnostic tools. This does not include instability, or uncontrolled separation as these would be identified by more advanced tools first.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Same response as provided for Question 33.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** It is unreasonable to expect there will be a documented mitigation plan for everything. A storm or other cause of combined events can result in unanticipated or extremely rare outage scenarios. Lack of documentation for such scenarios need not be a hindrance since an experienced operator can promptly devise an effective mitigation plan. However, producing and maintaining documentation for all such scenarios would be burdensome and inefficient.

Will it be possible to keep a mitigation plan matrix up to date and get necessary approvals in a timely fashion?

Who will approve the mitigation plan?

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Cannot agree with this approval process since it remains somewhat undefined. For instance, who gives the approval?



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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Subject to the response given to Question #36, the TOP should be held accountable for maintaining an accurate record of relevant mitigation plans for its area as supplied by the RA.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Agreement would depend upon addressing the concerns expressed in Questions #37 and #38 above.

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

Yes

No

**Comments:** What is meant by "specified period of time" in the statement "The Reliability Authority shall document . . . exceeded for a specified period of time?" Agreement to this requirement will have to wait until meaning of "specified period of time" is specified.

In many cases, a complete and final report cannot be produced within 72 hours. This requirement would be feasible if its requirement were for a preliminary report within 72 hours.

This requirement may be a heavy burden on the RA staff depending on the detail required in the documentation. Will the compliance monitor take immediate action on a report filed within 72 hours, what will the compliance monitor do with these reports, what is the compelling reason for providing these reports within 72 hours?

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

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Yes

No

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** The requirement's use of the word "identified" creates confusion by implying the existence of OSL's not identified or, worse, that the TOP requirement is somehow dependent on the TOP's act of identifying something which invites failure, intentional or otherwise, to identify and document violations.

Must all OSL violations fall under the purview of this standard or only those OSL violations with regional impact? If this standard applies for every violation, including minor line overloads, etc., the documentation and reporting requirements would be overwhelming.

The requirement should dictate how long documentation must be retained.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:** Actually, how would the MISO "Day 2" market, as proposed, conform to the definitions proposed in this new standard?

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**It is unclear how fines are levied based on \$'s or \$'s/MW. Some examples may be of value that show people the cost of non-compliance. The pricing signals may (or may not) push people to improve their processes to achieve compliance sooner than later.**

**46. Which form of the Standard do you prefer?**

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** Version B is shorter.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** While it seems repetitive there is no other way to better mirror the NERC Functional Model.

Although version B is clearer than version A, version B might be better if altered so that the requirements for each type of entity are grouped. That is, all the requirements for the RA should be in one section so that the RA need not search the entire document for any remaining requirements that apply to them. Obviously, this would apply to all types of entities, IA, BA, Generator, TOW and TOP so they one have to look in one place.

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<b>STD Commenter Information (For Individual Commenters)</b>	
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<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

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**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

**Yes**

**No**

**Comments:** As long as specified data includes manually calculated values. Data should include real-time, state estimated, calculated or manually monitored values. It should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

**Do you agree?**

**Yes**

**No**

**Comments:**

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

**Yes**

**No**

**Comments:** This assumption needs to be clearly stated at the front end of the standard.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

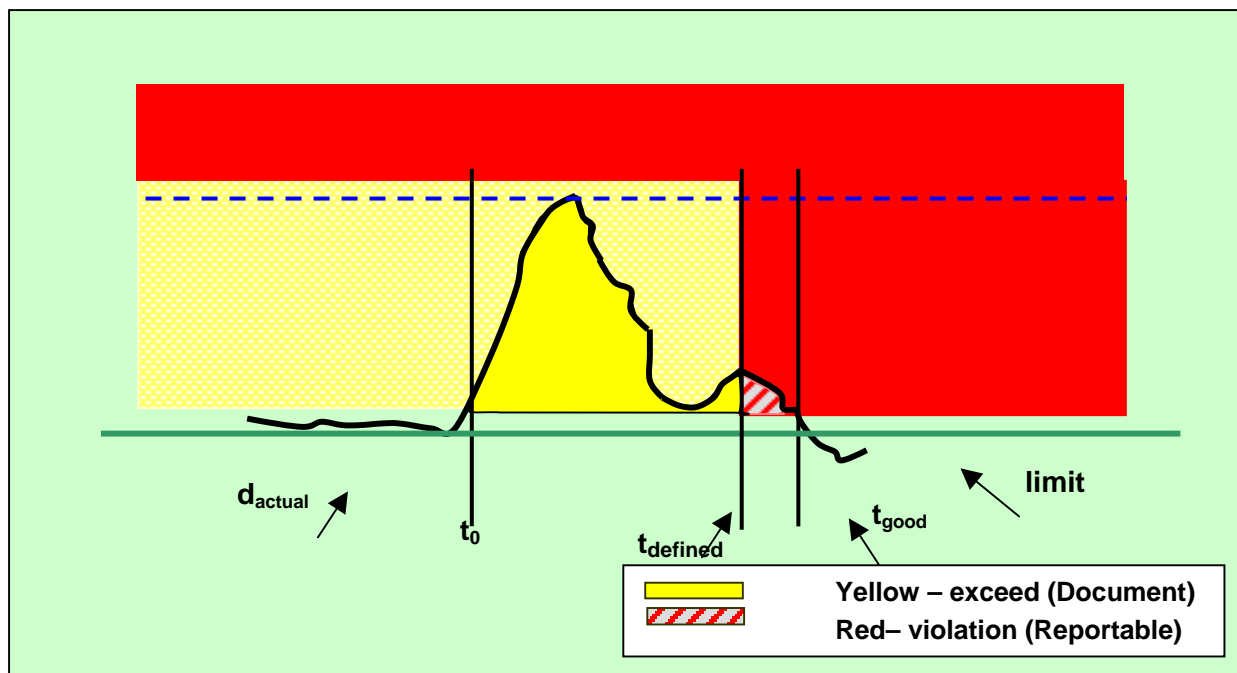
**Do you agree?**

**Yes**

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No

**Comments:** This assumption needs to be clearly stated and also should be similar to 4B of NERC policy



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** It would be of value to state that a reportable violation does not exist until the Operating Security Limit has been consecutively violated for tdefined. It would also be of value to state that the exceeding of the operating limit for any period of time must be documented. If in the graph the monitored value dipped below the Operating Security Limit for an instance and then exceeded the limit for the rest of the period and that was still an Operating Security Limit Violation, another loophole will have been addressed. Documenting near misses is also a good idea

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes



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No

**Comments: The graph still remains confusing and violations should be better defined.**

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**(1) Occurrence Period, (2) Operating Security Limit Violation**

**If possible, please provide us with a definition for each of these terms.**

(1) Occurrence Period - Not sure what you mean when you refer to an Occurrence Period, need better definition

(2) Operating Security Limit Violation - A limit that results in instability, uncontrolled separation, or cascading outages if exceeded for more than one hour. We believe this definition is appropriate for the existing NERC template on Operating Security Limit Violation.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

BA

TOP

Generator

Planning Authority

**Comments** The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the Reliability Coordinator (RC) should use data from the BA, the TOP, or the Planning Authority, if he can't get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the TOP. This should be allowed. As long as the data is accurately supplied, it doesn't matter who supplies it. I don't think the standard should be too prescriptive on who supplies the data.

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

RA

BA

Generator

Planning Authority

**Comments** The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the TOP should use data from the Reliability

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**Coordinator (RC), the BA, or the Planning Authority if he can't get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the RC. This should be allowed. As long as the data is accurately supplied I don't care who supplies it. I don't think the standard should be too proscriptive on who supplies the data.**

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**Please use Version A of the draft standard to answer these questions.**

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** . (1) Operating Security Limits are not usually monitored in real time. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Note 1 says - 'Real Time could be continuous analog data or data sampled at a rate greater than or equal to one minute -----'. One minute is a unit of time not a rate. It should say - 'Real time could be continuous analog data or data sampled faster than or equal to once a minute-----'. (4) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202 applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing

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wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

- Yes  
 No

**Comments:** We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed. (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. This concept also needs to be reflected in section 202 (e) Compliance Monitoring Process.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** (1) Operating Security Limits are not usually monitored in real time. (2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working. (3) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202

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applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA’s hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

Yes

No

**Comments:** We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. We would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable
4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses



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Yes

No

**Comments:** . Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. I would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

### 17. Do you agree with these levels of non-compliance for this requirement?

Yes

No

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**Comments:** Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes  
 No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) Change 'by an (associated) RA' to 'by another RA'. Less words, more descriptive. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the BA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

- Yes
- No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the IA can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:**

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

- Yes
- No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the TOP can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:**

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'. (2) I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the Generation Owner can request the data. The standard needs to be clear on which meaning is correct. (3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

- Yes  
 No

**Comments:** Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** The Reliability Coordinator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.



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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** The Transmission Operator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

- Yes
- No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** We agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. We don't think that the Reliability Coordinator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** (1) Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don't think that the Transmission Operator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** This is very confusing because this standard does not identify which operating limits have to be reported and what conditions trigger a reporting event. As an example; a construction project requires a reconfiguration of a power plant substation. This reconfiguration creates a situation where the generating units operating at full load may go unstable with a three phase fault outside the substation and a breaker fail to trip condition. Operational planning studies will show that reducing the plant generation to 60% allows the units to remain stable during the fault conditions. Does this become an operating limit? What happens if the transmission operator elects to take the chance and keep the units operating at full load because the system is capacity short, the UN peace keeping negotiating team is in town, and the probability of having a bolted three phase fault with a stuck breaker is very,very low. Has the operator violated an operating limit? Does the operator have to complete a violation document? This standard has to define what is a violation and when does the violation have to be reported and documented.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

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**41. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:**

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** See the response to question 40

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

Yes

No

**Comments:**

**If yes, please identify what you feel should be added.**

**45. Is the draft standard missing any requirements that should be added?**

Yes

No

**Comments:** 1) Throughout the standard the term Reliability Authority is used. This term is out of date and has been replaced by Reliability Coordinator. Is the Reliability Authority in this questionnaire identical to the Reliability Coordinator function? This issue needs clarification. If the Reliability Authority in this questionnaire is different than the Reliability Coordinator function, there needs to be an explanation of the difference. (2) Throughout the standard the term 'system operating limit' is used. This term should be replaced with the term 'Operating Security Limit'. There are many different system operating limits. These standards do not apply to all of them. This standard only applies to Operating Security Limits violations. The term Operating Security Limit should be used and defined to distinguish it from the multitude of system operating limits that are routinely used in everyday operation.

**If yes, please identify what you feel should be added.**

**(1) Throughout the standard replace the term Reliability Authority with Reliability Coordinator.  
(2) Throughout the standard replace the term 'system operating limit' with Operating Security Limit. Write a definition of Operating Security Limit.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:** It will be easier to modify the standards if each requirement is a stand alone item.

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** I believe that NERC has taken the old hardware/software problem and increased it

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exponentially. There is a computer problem; hardware blames software and software blames hardware. It appears that NERC has set up the condition where there will be finger pointing between the IA, RA, BA, and TO. Because of this potential it is very important to get this correct before it goes to drafting committee.

Another concern that I have is that the whole RTO/SAR process has taken away the common sense factor. As an example: The temperature is 30 degrees below zero and the wind speed is 20 miles per hour. The associated high loads has caused the transmission lines into the area to become overloaded based on an operating limit developed at zero degrees and a wind speed of 10 miles per hour. The only solution is to reduced load in the area through rotating the opening of distribution breakers throughout the area. The problem is that once a distribution breaker is opened there is a good chance that it will not close when called upon due to the cold weather. The RA or TO or whatever does not call for load reductions due to exceeding the operating limit, serves the load with no problem because the true limits are higher than the reported limits or a small amount of loss of life is taken out of the lines. My fear is that because a limit has been violated the TO or RA will be placed on the NERC rack and tortured. Once that happens the next time you will see load shedding causing even more problems.

I do support ECAR's responses and much of PJM's responses.

After reviewing all of this TO, IA, BA, and RA I am heading to AA because I really want a drink.



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1. The draft standard uses the term 'data' to allow for real, state-estimated or other calculated values. Do you agree?

Yes

No

Comments:

2. The draft standard uses the term 'Reliability Analysis' to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.

Do you agree?

Yes

No

Comments:

3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this "base data" that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Yes

No

**Comments:** It is unclear whether the certification process will address the provision of the data. If it does, then we agree with this. If it does not, then we need to ensure somewhere, perhaps in this standard, that the data is indeed provided.

4. The draft standard uses the term "Industry Accepted Format" to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.

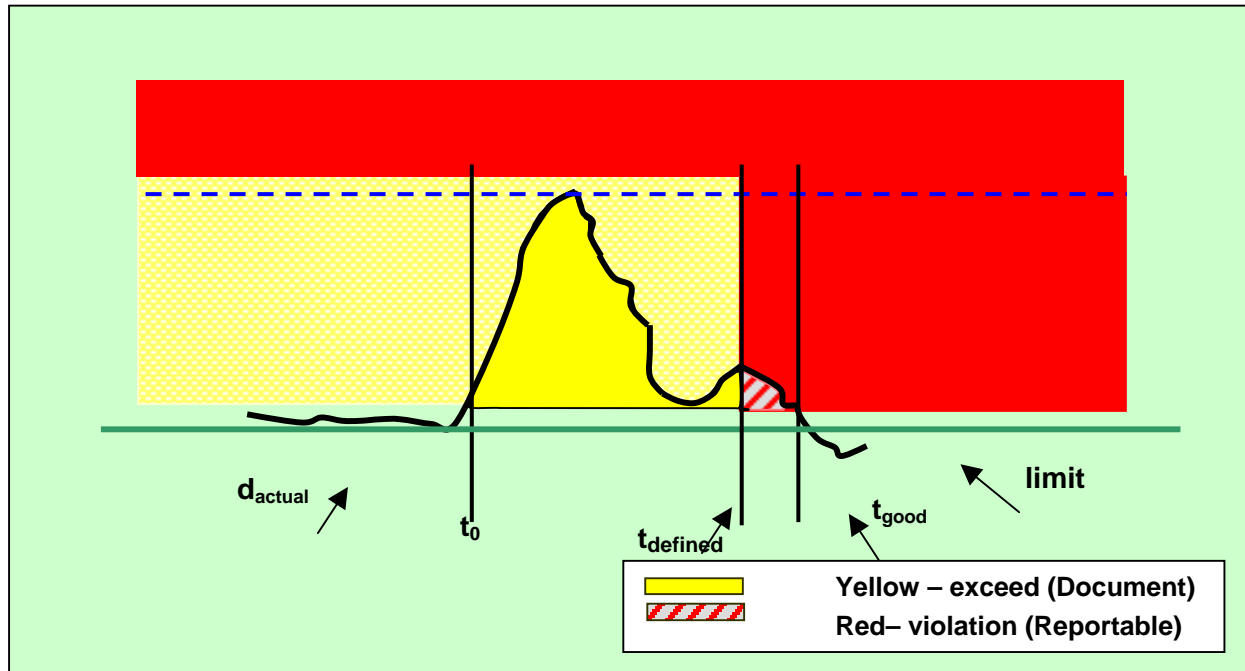
Do you agree?

Yes

No

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Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes

No

**Comments:** It is unclear which context applies to "reportable violation". If the violation being reported to NERC is the context, then this may be true only if the limit being monitored is an IRL (old OSL). It is true that the graph depicts an operating limit being exceeded. Whether it is reportable depends upon the context of whether it may be internally reportable on a Region basis, or whether it is intended to refer to reportable to NERC.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes

No

**Comments:** See our comments on #5 above.

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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**Instability**

**Uncontrolled Separation**

**Cascading Outages**

**Widespread Area**

**Local Area**

**If possible, please provide us with a definition for each of these terms.**

ERCOT has been participating in the NERC Operating Limit Definition Task Force. Please refer to the Task Force Report. The NERC OC has endorsed the recommendations of the Task Force and has directed the Reliability Coordinators to use these definitions as a "field test" this summer, and to work with the Standard Drafting Team to incorporate these definitions into the Reliability Standard.

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**BA**

**TOP**

**Generator**

**Planning Authority**

**Comments In ERCOT, the TOP does not receive all of the generator data; some is provided to the TOP in an Interconnection Agreement, but more is required to be provided to ERCOT in its role as the RA.**

**TheBA may well provide the data if the generators are under a contractual obligation to do so with the BA.**

**The Generator Owner and the Transmission Owner provides data for their facilities.**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

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**Please check all that apply.**

**RA**

**BA**

**Generator**

**Planning Authority**

**Comments ERCOT performs these analyses as the RA, BA, and Planning Authority, although the TOP is not precluded from doing so. The RA must ensure the analyses are performed. In ERCOT, ERCOT performs the analyses. The RA may or may not accept the TOP's analyses.**

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**Please use Version A of the draft standard to answer these questions.**

### **Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

### **Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

### **Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

### **10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Please refer to the NERC Operating Limit Definition Task Force (OLDTF) report. ERCOT agrees with the contents of that report.

The RA must ensure that system operating limits and interconnected reliability limits are established.

The measures do not relate to the requirement. The requirement is that the RA shall monitor, not that the limits be available or that data is available. Those measures should pertain to the function(s) responsible for providing the limits and ratings, such as the Generator Owner or the Transmission Owner.

The measure should be that the RA did indeed monitor the limits. What's unstated is over what timeframe. Continuous monitoring? Hourly? Other?

### **Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

### **11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please refer to the comments to #10 above. The RA typically can't control



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whether the data is provided, but may have acceptable and prudent measures in place to require the data. This comment would apply throughout this document.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Same comments as in #10 above. The measures don't relate to the requirement.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Same comments as #11 above.

It appears that there will likely be numerous Level 1 non-compliances unless a threshold is established. System Operation experience shows that metering signals fall in and out. If Level 1 indicates that every time a metering signal is lost, you are non-compliant. This needs some reconsideration. The drafting team should consider that state estimators can supply some of the data in a short term.

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### Requirement 3:

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

### Measure(s):

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

### 14. Do you agree with this requirement?

Yes

No

**Comments:** The Requirement should be refocused to state that the RA needs to maintain accurate models and run studies to determine limits rather than directing the RA to collect the data it needs. There should be Requirement for the Transmission Owner, Generation Owner, LSE, and TOP to provide the RA with the data it needs for its studies.

Under Requirements 6 and 7, minimum times are specified for provision of "monitoring" data provision. However, no similar minimum time line is stated for this Requirement. For consistency, a minimum time should also be stated. This time specification should provide sufficient time for the RA, etc., to perform data base modelling and development and confirmation of limits.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please see the first paragraph of comments to #14 above.

The RA typically has no control over whether the data is provided, but may have prudent and acceptable measures in place which require the data.

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### Requirement 4:

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP's hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

### Measures:

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

### Outcome(s) (100% Compliance):

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

### 16. Do you agree with this requirement?

Yes

No

**Comments:** Same comments as for #14 above, but with focus on TOP. Also, the TOP does not need to collect any information from the IA. The IA has next-hour bilateral and market interchange information, but it's not of any use to the TOP.

Under Requirements 6 and 7, minimum times are specified for provision of "monitoring" data provision. However, no similar minimum time line is stated for this Requirement. For consistency, a minimum time should also be stated. This time specification should provide sufficient time for the RA, etc., to perform database modelling and development/confirmation of limits.

### Levels of Non-compliance for this Requirement:

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** Please see comments for #15 above.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

- Yes  
 No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:**

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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

Yes

No

**Comments:** The timing of this Requirement conflicts with Requirement 5. That is, the seven days does not leave the RA any time to complete its obligations under Requirement 5.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** This Requirement does not make sense. The IA authorizes next-hour bilateral transactions and Market dispatch that are ready for physical implementation.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments to #22 above.



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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

- Yes  
 No

**Comments:** The timing of this Requirement conflicts with Requirement 5. This is, the seven days does not leave the RA any time to complete their obligations under Requirement 5.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** See comments to #24 above.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** The timing of this Requirement conflicts with Requirement 5. That is, the seven days does not leave the RA any time to complete their obligations under Requirement 5.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments to #26 above.

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** We agree with the Requirement; however, as written, it assumes that all RAs have online reliability analysis programs to identify the applicable limits. In fact, many use off-line studies to perform base case analyses, which are translated into cyclic computer calculations.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please see comments to #28 above. Also, the Requirement is seemingly more important than it is depicted here. Instead of skipping Level 4, should use Levels 2, 3, and 4 with the caveat of having appropriate predetermined analyses to take the place of real-time analyses.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

Yes

No

**Comments:** In ERCOT, the primary responsibility for such analysis is ERCOT as the RA. This is in conjunction with any analysis the TOP performs, but the TOP does not have the primary responsibility. In other words, the RA is responsible for these analyses.

Also, please see comments to #28 above.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please see comments to #29 above.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:**

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Level 2 and 3 appear to be the same.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

Yes

No

**Comments:** This Requirement does not adequately address the coordination that must take place between the TOP and the RA. Furthermore, the TOP may not include a wide enough scope to determine these limits.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please see comments to #33 above. Level 2 and 3 appear to be the same.

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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** re: Outcomes. Shouldn't this read "procedure or policy" to ensure "Operating within limits and associated mitigating actions are taken." How can you have a "documented, approved mitigation plan" for unknown contingencies? Furthermore, such a plan as required by Requirement 14 should be part of the Certification requirements, not this standard.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please see comments to #36 above.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Please see comments to #36 above.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:**



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### Requirement 16:

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### Measure(s):

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

### Outcome(s) (100% Compliance):

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

### 40. Do you agree with this requirement?

- Yes  
 No

**Comments:** Please refer to the OLDTF report. This should apply to IRL Compliance Violations only. Also, this should be split into a Preliminary Report and a "complete" Report. The Preliminary Report should be submitted within 72 hours. A longer time is required for the "complete" report; probably a minimum of one month.

### Levels of Non-compliance for this Requirement:

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

### 41. Do you agree with these levels of non-compliance for this requirement?

- Yes  
 No

**Comments:** Level 3 implies a log is kept, but the information could be kept in some other form. The important point is that the supporting documents be available.

Please see comments to #40 above and the suggestion that the report be split into

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preliminary and final versions.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** ERCOT agrees with the OLDTF report and feels that this Requirement needs to be reviewed with respect to that report. If the Requirement refers to documenting SOL violations as defined by the OLDTF, then reporting may be required to the Regional Council. If the Requirement refers to IRL Compliance Violations, then the RA needs to submit the report to the Regional Council and NERC.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Please see comments to #42 above.

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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

**Yes**

**No**

**Comments:** In the ERCOT Region, ERCOT uses ratings provided by the equipment owners to determine the limits. The TOP doesn't determine them.

**If yes, please identify what you feel should be added.**

**In some Regions or Interconnections, the RA may delegate certain tasks to other functions, though the RA is responsible for ensuring that these tasks are performed. There needs to be some kind of general statement to this effect. Perhaps this is being addressed in the Functional Model.**

**45. Is the draft standard missing any requirements that should be added?**

**Yes**

**No**

**Comments:** Should consider the definitions and recommendations developed by the NERC Operating Limit Definition Task Force and endorsed by the NERC Operating Committee.

**If yes, please identify what you feel should be added.**

**Please refer to the NERC OLDTF Report.**

**46. Which form of the Standard do you prefer?**

**Version A – Each Requirement Separate**

**Version B – Related Requirements Combined**

**Comments:**

**47. If you have comments on the format of the standard, please share them with us.**

**Comments:** You are encouraged to make them as simple as possible. Organization and means to find content needs to be very clear. Realizing that these are very complex, perhaps they need to be followed up with summaries by function or subject, such as Compliance Requirements, Planning Requirements, Operating Requirements, etc.

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Linda Campbell
Organization	FRCC
Industry Segment #	
Telephone	
E-mail	

- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

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STD Commenter Information (For Groups Submitting Group Comments)		
Name of Group: <i>FRCC Members</i>		Group Chair: Chair Phone: Chair Email:
List of Group Participants that Support These Comments:		
Name	Company	Industry Segment #
<i>Linda Campbell</i>	<i>FRCC</i>	<i>2</i>
<i>Roger Westphal</i>	<i>Gainesville Regional Utilities</i>	<i>3</i>
<i>Ted Hobson</i>	<i>JEA</i>	<i>1</i>
<i>Wendell Payne</i>	<i>Florida Power &amp; Light Company</i>	<i>1</i>
<i>Paul Elwing</i>	<i>Lakeland Electric</i>	<i>3</i>
<i>Joe Krupar</i>	<i>Florida Municipal Power Agency</i>	<i>3</i>
<i>Vern Ingersoll</i>	<i>Progress Energy</i>	<i>1</i>
<i>Eric Grant</i>	<i>Progress Energy – Florida</i>	<i>1</i>
<i>Chuck Harper</i>	<i>Progress Energy - Florida</i>	<i>1</i>
<i>Ben Sharma</i>	<i>Kissimmee Utility Authority</i>	<i>3</i>
<i>Ron Donahey</i>	<i>Tampa Electric Company</i>	<i>1</i>

**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Yes

No

**Comments:** However, we question why the non-compliance levels for the first two requirements require actual data. You should be able to use state estimated or other calculated values as appropriate.

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**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

Do you agree?

Yes

No

**Comments:** The footnote appearing on pg.1 of Version A defines "real time" but it is not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to "real-time" conceptually imply data, or processes, or both?

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

**Comments:** The certification process for the RA or TOP is not the place to ensure that correct modeling data is supplied by operating entities. The requirement for obtaining initial data, and future changes to data needs to reside in one standard.

In addition, the draft standard only requires 7 days prior to the energization of new facilities for new data to be submitted. This short time frame may not be enough for operational planning studies that may go out as far as 12 months. Perhaps NERC should not make this requirement, but leave it up to the Region, or Reliability Authority to determine what the appropriate notification time is.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

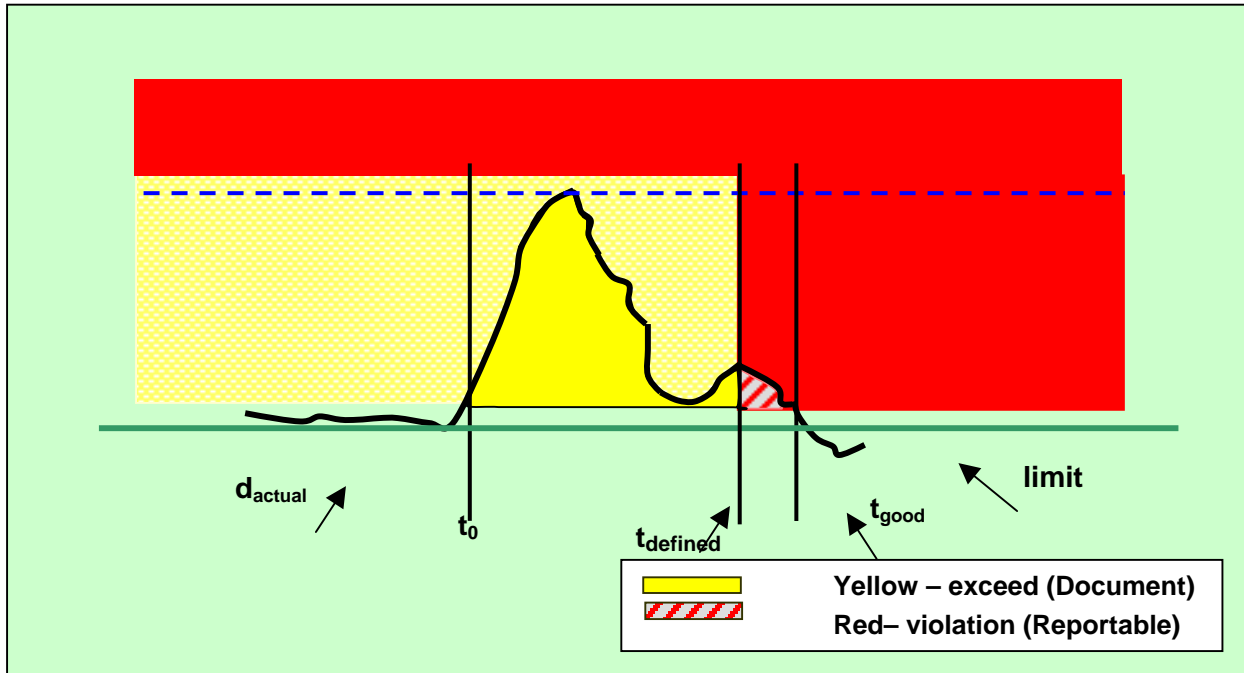
Do you agree?

Yes

No

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Comments:



5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?

Yes  
 No

**Comments:** There are too many "irons in the fire" just now. The NERC OC has a task force working on this particular issue, and as indicated in the March OC meeting highlights, have directed the Reliability Coordinators to "field test" the OLDTF's definition and reporting form.

6. Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Yes  
 No

**Comments:** See comment in question 5.



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**7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here.**

**If possible, please provide us with a definition for each of these terms.**

**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**BA**

**TOP**

**Generator**

**Planning Authority**

**Comments**

**9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.)**

**Please check all that apply.**

**RA**

**BA**

**Generator**

**Planning Authority**

**Comments**

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*Please use Version A of the draft standard to answer these questions.*

**Requirement 1:**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The RA shall monitor real time system operating limits and compare these against actual data associated with those limits.

**10. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** Real time data is actual data. It would seem that the reference to actual in item 2 is not necessary and may cause confusion. Also, as real time data may be temporarily unavailable from time to time, state estimation or other calculated data should be acceptable.

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**11. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** There can be legitimate reasons for telemetered data being unavailable. Perhaps it would be more appropriate to change the timing in item 1 from "for up to 24 hours" to "for 12 to 24 hours". Again, what is wrong with using state estimation data, or other calculated data? These non-compliance levels are not realistic.

If item 2 is intended to be a next level of non-compliance, it should be between 24 to 48 hours.

You do not ask a question about the compliance monitoring process, but we would like to provide comment on that section as well. Section 201 (e) states that the RA will demonstrate compliance thru the self certification process with re-certification on a schedule established by the compliance monitor. We do not agree with the re-certification part of this statement. The

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compliance monitoring of this standard is not for certification on an entity performing a function. There is no need for any re-certification in connection with this standard. The self certification process is just a way for an entity to provide information to the compliance monitor that will be validated thru spot reviews etc. The re-certification statement appears in every compliance section in this document. It needs to be removed throughout.

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**Requirement 2:**

The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Measure(s):**

1. System operating limits are available in real time
2. Actual real time data is available in a form that can be compared to the system operating limits

**Outcome(s) (100% Compliance):**

The TOP shall monitor real time system operating limits and compare these against actual data associated with those limits.

**12. Do you agree with this requirement and its associated performance/outcome and measure/s?**

Yes

No

**Comments:** This requirement is a duplicate of what was in Requirement 1 for the RA. We are confused as to whose responsibility it is to monitor the system operating limits. Shouldn't the requirement be for the TOP to provide telemetry data to the RA so the RA can monitor and assess the entire area?

**Levels of Non-compliance for this Requirement:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**13. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Same comment as provided in response to question 11 for the RA.

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**Requirement 3:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA’s hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

**Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

**14. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** However, as stated in an earlier question, this assumes that the initial data is obtained via requirements for certification. We believe that the requirement for specification of data should not depend on if it is initial data, or updates. However, the RA should have a process in place for collecting that data as new facilities come into service or change.

The outcome seems to be just a restatement of the requirements. It does not add anything to the standard.

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested or there was no record of specification
3. Not Applicable

<sup>1</sup> Reliability analyses includes both real time and operational planning analyses

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4. Not Applicable

**15. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** The 2<sup>nd</sup> level is confusing. If data was not requested, perhaps it was not needed. It would seem to go back to what the specification is requiring to be provided. Perhaps a more important level would be if the RA requested data, did not receive it, and did not attempt any further to get it. In the 2<sup>nd</sup> level statement is says "or there was no record of specification". Isn't that essentially the same as the 1<sup>st</sup> level?

Again, you did not ask about the compliance monitoring section. Please see comment stated earlier about self-certification and re-certification.

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**Requirement 4:**

The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>2</sup>

The TOP shall specify when to supply data (based on the TOP’s hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**

The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**16. Do you agree with this requirement?**

- Yes  
 No

**Comments:** In requirement 3, the RA has already determined what data it needs for reliability analyses and system monitoring. It appears to be redundant to have the TOP do the same thing. Would it be more appropriate for the TOP to have a requirement to provide the requested data to the RA and then be measured in how they perform that?

**Levels of Non-compliance for this Requirement:**

1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )
2. Data was not requested **OR** there was no record of specification
3. Not Applicable
4. Not Applicable

**17. Do you agree with these levels of non-compliance for this requirement?**

- Yes

<sup>2</sup> Reliability analyses includes both real time and operational planning analyses

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**No**

**Comments:** Based on our comment to question 16, we would recommend that compliance for the TOP be built around providing the requested data to the RA.

**Requirement 5:**

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measures:**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

**Outcomes (100% Compliance):**

The RA shall provide data as requested, to its (associated) RA and/or TOP.

**18. Do you agree with this requirement?**

**Yes**

**No**

**Comments:** This requirement seems backwards. Shouldn't the TOP be the entity to provide data on new facilities to the RA? Also, submitting data 7 days prior to the energization of new facilities may not be long enough, especially for operational planning studies that may go out as far as 12 months. Perhaps NERC should not make this requirement, but leave it up to the Region, or Reliability Authority to determine what the appropriate notification time is.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**19. Do you agree with these levels of non-compliance for this requirement?**

**Yes**

**No**

**Comments:** Requirements 4 and 5 need to be combined and focus on the TOP providing data to the RA when appropriate or requested. The RA needs to have a process in place for obtaining the data it needs which would include the timeframe for submitting data as well as the specification of what data is needed.



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**Requirement 6:**

The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The BA shall provide data, as requested, to its (associated) RA and/or TOP.

**20. Do you agree with this requirement?**

- Yes
- No

**Comments:** This requirement should not just focus on new facilities or changes to existing facilities. As we have stated for the TOP, the BA should have requirements for providing the data to the RA as specified by the RA and in the timeframe the RA needs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**21. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Perhaps there should be several levels that are time dependent. See earlier comments regarding self certification and re-certification.

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**Requirement 7:**

The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The IA shall provide data, as requested, to its (associated) RA and/or TOP.

**22. Do you agree with this requirement?**

Yes

No

**Comments:** First of all, the information the IA will be providing the RA will deal with interchange schedules. We are not sure what other information the IA will be giving the RA or TOP for that matter that will involve new facilities. Would it be more appropriate to have the requirement center around the IA providing the interchange information to the RA in a timely manner so that the impact of the interchange schedules can be considered in the reliability analyses?

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**23. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Can not comment on this as we believe the requirement for the IA is not accurate.

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**Requirement 8:**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**24. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement should not just focus on new facilities or changes to existing facilities. As we have stated for the TOP, the TOW should have requirements for providing the data to the RA as specified by the RA and in the timeframe the RA needs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**25. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Perhaps there should be several levels that are time dependent. See earlier comments regarding self certification and re-certification.

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**Requirement 9:**

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Measure(s):**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s) (100% Compliance):**

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

**26. Do you agree with this requirement?**

Yes

No

**Comments:** This requirement should not just focus on new facilities or changes to existing facilities. As we have stated for the TOP, the generation owner should have requirements for providing the data to the RA as specified by the RA and in the timeframe the RA needs.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Data for new/revised facilities was not provided as requested

**27. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Perhaps there should be several levels that are time dependent. See earlier comments regarding self certification and re-certification.

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**Requirement 10:**

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**28. Do you agree with this requirement?**

Yes

No

**Comments:** The FRCC Security Process specifies the periodicity for performing real time contingency analysis and for operations planning studies. We agree with this requirement but would not support NERC telling how often the analysis should be performed. That should be left up to the Regions or the RAs.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis did not run when requested, but ran within 8 hours
2. Reliability analysis did not run when requested, but ran in 8 - 24 hours
3. Reliability analysis did not run when requested, and did not run within 24 hours
4. Not Applicable

**29. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We are not sure that these levels fit completely. Wouldn't it depend on the type of reliability analyses being performed. For instance, if a real time contingency analysis was to be run by the RA every 5 minutes, these levels might not apply. But, if it was for a 7 day study twice a week, these might be more appropriate. Also, who is requesting the reliability analysis? In FRCC, our Security Process (Reliability Plan) document lists the requirements for the reliability analysis in our region.

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**Requirement 11:**

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Measure(s):**

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

**Outcome(s) (100% Compliance):**

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**30. Do you agree with this requirement?**

- Yes  
 No

**Comments:** It would seem that this requirement is really unnecessary. Requirement 10 has the RAs performing the analysis and that should be all that is needed. However, if it were to stay, TOPs should not be required to run on-line/real-time automated studies to identify and/or forecast bulk reliability concerns. NERC should not expect every TOP to acquire and maintain on-line reliability analysis tools without adequate reliability benefit to justify such a costly universal requirement - particularly since the RAs will be required to use such tools anyway.

**Levels of Non-compliance for this Requirement:**

1. Reliability analysis does not run when requested, but runs within 8 hours
2. Reliability analysis does not run when requested, but runs in 8 - 24 hours
3. Reliability analysis does not run when requested, and does not run within 24 hrs
4. Not Applicable

**31. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** We really do not think this requirement is necessary.

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**Requirement 12:**

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**32. Do you agree with this requirement?**

Yes

No

**Comments:** We do support this requirement, but have concern about the type of documentation that is contemplated. This may need to connect back to the work of the OLDTF and what is reportable or not. We would not support keeping a lot of documentation for things that are not reportable. Documentation can be costly and we do not favor doing it unnecessarily. Regions may already have documentation requirements so we would like to see more details on what is envisioned here.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**33. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** We are not sure what the difference is between level 2 and level 3. Also, if the RA gave direction to a TOP or BA to implement a mitigation plan, and the TOP or BA did not do it in time, who would the non-compliant party be? The RA's responsibility is to monitor and take action, which could be giving direction to some other entity, so it would seem like the non-compliance levels need to focus on did the RA do what they should do, or not.

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**Requirement 13:**

The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The TOP shall document actions taken.

**Measure(s):**

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Outcome(s) (100% Compliance):**

The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**34. Do you agree with this requirement?**

- Yes
- No

**Comments:** See our comment on requirement 4. Again, this seems redundant to what the RA is doing via requirement 12. It would seem more appropriate to have the TOP have a requirement to work with the RA in providing mitigating plans and taking actions as directed by the RA.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**35. Do you agree with these levels of non-compliance for this requirement?**

- Yes
- No

**Comments:** Similar to our comments on question 33, not sure what the difference in level 2 and 3 are. Anyway, since we think the requirement itself needs to be changed, the non-compliance levels would need to be based on the revised requirement.



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**Requirement 14:**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measures(s):**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**36. Do you agree with this requirement?**

Yes

No

**Comments:** Mitigation plans of the TOP, BA etc. need to be understood and reviewed by the RA so that when limits are exceeded, the RA can direct actions that will return the system to a normal or safe operating state. The outcome statement says that the RA will have a documented, approved mitigation plan. Who is this mitigation plan to be approved by? This requirement is not very clear.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**37. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Until the requirement itself is better understood, we can not comment on these levels.

In the draft standard, in the compliance monitoring process section 214(e), there is a sentence that states "The compliance monitor shall evaluate the mitigation plan and/or procedures." Why is this here? The compliance monitor will evaluate compliance to the requirement measures. It does not seem correct that the compliance monitor will evaluate mitigation plans, as that is not their area of expertise.

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**Requirement 15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

**Measure(s):**

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

**Outcome(s) (100% Compliance):**

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**38. Do you agree with this requirement?**

Yes

No

**Comments:** Again, we have the question about the TOP having an approved mitigation plan. Who does the approval? The RA should understand the mitigation plan, and agree that it will correct the problem, but approval may not be the appropriate word.

Not only should the TOP have a mitigation plan ready, but they should have a requirement to implement it when directed to by the RA.

**Levels of Non-compliance for this Requirement:**

1. Mitigation Plan and/or procedure(s) exists but wan't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

**39. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** Should compliance levels be for having a plan and implementing it when directed. What good is a plan if it is not used?

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**Requirement 16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

**Measure(s):**

1. Data exists and is retrievable that documents instances of exceeding identified system operating limits
2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)
3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

**Outcome(s) (100% Compliance):**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceed for a specified time period. The report shall be filed within 72 hours of the event.

**40. Do you agree with this requirement?**

- Yes  
 No

**Comments:** However, there are too many "irons in the fire" just now. The NERC OC has a task force working on this particular issue, and as indicated in the March OC meeting highlights, have directed the Reliability Coordinators to "field test" the OLDTF's definition and reporting form. The results of this "field test" need to be considered in this requirement.

**Levels of Non-compliance for this Requirement:**

1. Report was filed on time but was incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

**41. Do you agree with these levels of non-compliance for this requirement?**

- Yes  
 No

**Comments:** FRCC would like to wait until the "field test" of the OLDTF recommendation is completed to understand this requirement and its levels of non-compliance before commenting

FRCC EC & OC COMMENTS 4/02/03

**STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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further.

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**Requirement 17:**

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Measure(s):**

Data exists and is retrievable

**Outcome(s) (100% Compliance):**

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**42. Do you agree with this requirement?**

Yes

No

**Comments:** See comments to question 40.

**Levels of Non-compliance for this Requirement:**

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Documentation didn't exist

**43. Do you agree with these levels of non-compliance for this requirement?**

Yes

No

**Comments:** See comments to question 41.

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44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?

Yes

No

**Comments:** The FRCC Security Process (Reliability Plan) has requirements for real time and operations planning analysis. NERC needs to be very careful when attempting to require certain periodicity for studies as each region may already have established what it requires.

If yes, please identify what you feel should be added.

45. Is the draft standard missing any requirements that should be added?

Yes

No

**Comments:** See comments to the questions. We have already identified some of these, especially with regard to the BA, TOP etc implementing mitigation plans, providing data etc.

If yes, please identify what you feel should be added.

46. Which form of the Standard do you prefer?

Version A – Each Requirement Separate

Version B – Related Requirements Combined

**Comments:** It is much easier to understand when related items are together. Version B is more clearly written and easier to follow.

47. If you have comments on the format of the standard, please share them with us.

**Comments:** All assumptions and definitions should be included in the standard.

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<b>STD Commenter Information (For Individual Commenters)</b>
Name
Organization
Industry Segment #
Telephone
E-mail

<p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group: <i>NERC Compliance Subcommittee, Compliance Managers Committee, Compliance Subcommittee</i></b>		<b>Group Chair: <i>Norb Mizwicki</i></b> <b>Chair Phone: 630-261-2600</b> <b>Chair Email: ndm@maininc.org</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Norb Mizwicki</i>	<i>MAIN</i>	<i>RRC</i>
<i>Ray Palmieri</i>	<i>ECAR</i>	<i>RRC</i>
<i>Ron W. Ciesiel</i>	<i>SPP</i>	<i>RRC</i>
<i>Shel Berg</i>	<i>MAPP</i>	<i>RRC</i>
<i>Robert Dintelman</i>	<i>WECC</i>	<i>RRC</i>
<i>Stuart Nelson</i>	<i>LCRAA</i>	<i>Trans Owner/Gen</i>
<i>Art Giardino</i>	<i>PSE&amp;G</i>	<i>Trans Owner/Gen</i>
<i>Harlow Peterson</i>	<i>SRP</i>	<i>Trans Owner/Gen</i>
<i>Tom Hallam</i>	<i>FRCC</i>	<i>RRC</i>
<i>Gerald Steffens</i>	<i>RPU</i>	
<i>Mark Kuras</i>	<i>MAAC</i>	<i>RRC</i>
<i>Chuck Waits</i>	<i>METC – LLC</i>	<i>Trans Owner</i>
<i>Joe Willson</i>	<i>MAAC</i>	<i>RRC</i>
<i>Ev Lucenti</i>	<i>Power Decisions</i>	

## **STD Comment Form for 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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March 30, 2003

### **Comments on Operating Within Transmission Limits Standard (OWL)**

#### **Simplify the Standard**

There is a fairly consistent theme across the comments that the draft OWL Standard should be simplified and clarified. The standard is focusing too much on data reporting, documentation, tools, etc. and is missing the key point to get operators to take appropriate actions in the right time frame to address OSL violations.

The OWL standard should focus on the **monitoring** of transmission system data and status and **Operating Security Limits**, to prevent Operating Security Limit **violations**, mitigate violations within specific time frames when they occur, and **report** such violations to NERC.

#### **Operating Security Limits**

There are several comments that propose that the definition of an Operating System Limit (OSL) is too narrow. A “System Operating Limit is a limit that has been “identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.”

“As conceived, this standard does not result in any entity assuring that bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby require monitoring and adherence, should be covered by this standard.”

#### **Proposal**

**The Transmission System elements that have “established limits” to comply with the Disturbance Performance Table should be included in the OSL monitoring list.**

#### **Violations**

The sanction measures in the draft standard are too focused on reporting and documentation, and rather should focus on OSL violations (violation meaning the limit has been exceeded by both a magnitude and time duration specification).

The levels of noncompliance as stated in the draft standard will be very difficult to measure, and should be replaced with measurable requirements that are practical to administer and that achieve desired results.

#### **Reporting**

There is a suggestion that there needs to be some definition of what should be “reportable” and that perhaps all incidents of OSL violations may not have to be reported.

#### **Requirement #1**

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.



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### **Proposal**

**The RA shall monitor (in real time) transmission system data and equipment status related to specific system operating limits and direct actions to prevent OSL violations.**

**Levels of non-compliance based on time over limit, and magnitude of limit violation. (Something similar to the matrix that is used in the WSCC would provide for the practical measuring of non-compliance.)**

### **Requirement #2**

#### **Proposal**

**Delete: Duplication of effort between RC and TOP**

### **Requirement #3**

#### **Proposal**

**The RC is required to do "Real Time Monitoring" of data and equipment status that relates to specific, current, System Operating Limits, therefore there should be a measure for this requirement, with sanctions indicated for non-compliance**

Acceptable parameters of monitoring must be defined. On the assumption that the transmission elements that will be monitored have been determined, and the Operating Security Limits have been defined, then:

1. Acceptable update frequency and accuracy of "Real Time Monitoring" of the data and equipment related to the OSL must be defined.
2. What data and equipment will be monitored must be established by the Reliability Coordinator and agreed to by the Transmission Provider.
3. The Transmission Provider must provide the data and equipment status information as required by the Reliability Coordinator. (Within agreed frequency of update and accuracy of data.)

### **Requirement #4**

#### **Proposal**

**The TOP is required to provide the RC the data and equipment status that relates to specific, current, System Operating Limits, at a pre-determined frequency of update, and accuracy of data. Therefore there should be a measure for this requirement, with sanctions indicated for non-compliance.**

### **Requirement #5 to #9**

The proposed requirements deal with data collection to support the models for system analysis.

#### **Proposal**

**The requirement for data provision/collection/timing and model development, and related compliance measurements and levels of non-compliance should be dealt with through the present working groups that are doing this work.**

**Requirement #10**

“The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.”

**Proposal**

**There should be some qualifiers that define a NERC minimum periodicity to complete reliability analysis. The RA should establish their particular cycle for doing reliability analysis, and that information should be included in their Certification documentation.**

**Need to define what types of analysis are expected: actual flows versus limits, contingency analysis of all possible contingencies? Analysis of only those conditions defined in the day-ahead or seasonal studies? Is the requirement to do a "reliability analysis" every day? every shift? everytime a change in system configuration demands etc.**

**Requirement #11**

**Proposal**

**Delete: Duplication of effort between RC and TOP**

**Requirement #12**

“The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.”

There are two parts to the Requirement. The first is a requirement to use the monitoring and analysis information to prevent an OSL. If this is done, there are no further requirements since there are no violations.

The second part of the proposed requirement is to determine how well the entity rectified (mitigated) the situation after a violation occurred. This will be part of the report and possible investigation after a violation occurs, and therefore will be part of the process of Requirement #1.

**Proposal**

**Delete Requirement #12**

**Requirement #13**

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RA does analysis of power system. The TOP shall implement actions in very few cases (line switching control actions and load shedding). If the TOP is to held to this requirement then there better be one for each of the other entities that the RA directs to take action (BA, IA, Generator Operators, LSE, etc.)

### **Proposal**

**Delete this requirement**

### **Requirement #14**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

### **Proposal**

**Delete this requirement**

**See Comments under Requirement #12**

### **Requirement #15:**

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

### **Proposal**

**Delete this requirement**

### **Requirement #16:**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

### **Proposal**

Delete

**There is no requirement to have a separate Performance Standard for a report. It seems that this would be more appropriately included in the Compliance Program. As example, as part of the Compliance Program, there would be a requirement for the RA to file a report within 72 hours of exceeding a System Operating Limit for greater than 30 minutes.**

The information required in the report would be included in the compliance program. Similarly, other data which should be included in the Compliance program, but not in the Performance Standard would be:

- Type of Compliance Assessment required: Periodic Audit, Investigation, Self Assessment etc
- Applicable to
- Monitoring responsibilities

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- Compliance assessment notes
- Multipliers for penalties
- Reset Periods
- Data Retention requirements
- Occurrence period

### Requirement #17:

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

### Proposal

**Delete**

**See Requirement #16**

### Other Questions

**1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?**

Varying interpretations occur if the term "real" is used in the Standards. Each time the term is used, the "writer" should consider explaining the meaning of the term.

The term data should be explicitly defined. In the example above, the writer refers to real data, state-estimated data, and calculated data. State estimated data, calculated data, manually input data, etc. are also real.

Consideration should be given to establishing a minimum performance or accuracy and frequency of update criteria for the calculated values and accuracy and frequency criteria of telemetered data values.

**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses.**

Do you agree?

**Yes**

**No**

RCs should be required to run (on-line/real-time automated studies and off line operational planning studies to identify and/or forecast bulk reliability concerns, but TOPs should not be subjected to such requirements.

What is real time? Need to define “operational planning analysis”.

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There should be some qualifiers that define a NERC minimum periodicity to complete reliability analysis. The RA should establish their particular cycle for doing reliability analysis, and that information should be included in their Certification documentation.

Need to define what types of analysis are expected: actual flows versus limits, contingency analysis of all possible contingencies? Analysis of only those conditions defined in the day-ahead or seasonal studies? Is the requirement to do a "reliability analysis" every day? every shift? everytime a change in system configuration demands etc.

**3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?**

Yes

No

### Comments:

1) The focus is only on providing specifications for the data required. It appears to be unclear that there is no requirement to actually provide the real-time data. For example, the TOPs are required to specify and require data, but they do not appear to be required to actually PROVIDE data to RAs.

2) The certification process for the RA/TOP is not the proper means to obtain correct modeling data. It may be appropriate for real-time metering data, but much of the static data for system modelling and analysis is the same as the planning function. It should be consistent with those modelling requirements also.

3) The standard does not distinctly identify the areas of responsibility between the Reliability Authority and the Transmission Operator. Application of the standard to multiple parties ("Authorities") should clearly delineate the primary source of responsibility and ownership of any data, information, control and responsibility. What follows in the Standard are many requirements that duplicate the RA and TOP responsibilities -- who has the primary responsibility/requirement/authority for each?

4) The only provision in this standard is that data on new facilities must be provided seven days before it is energized. If operational planning studies have a scope of greater than seven days (possibly one year), then a seven-day notice is inadequate

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for these studies. There appears to be a requirement to have a standard that requires entities to provide the base data used to populate the models, in addition to the requirement to provide information on changes.

5) All assumptions should be listed in the Standard's document.

What is meant by "Real time Monitoring"? Does this refer to computer updated data a System Operator will use? If data is updated every 10 minutes, or once an hour, or once a shift, is it Real Time? If a quantity is only updated once a week or once a year, is it considered Real Time Data? The writer must be able to describe what is meant by "Real time" so that the standard can be consistently measured.

**4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data.**

**Do you agree?**

**Yes**

**No**

**Comments:** ...as long as this does not lead to the creation of another "industry accepted format" or require a significant change from the way data has routinely been exchanged in the past. (typically using PSS/e or PSLF powerflow raw-data formats for representational data, etc.)

**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard?**

The work of the OLDTF has shown that there are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions. The Standard and its compliance measurements should not dictate whether a particular RA should operate in a predictive or a responsive mode (i.e., take action in advance to prevent an overload based on predictive analysis, or take steps to mitigate an actual overload only on occurrence)

The above statement is not reflective of most comments, and represents a minority opinion for consideration.

**45. Is the draft standard missing any requirements that should be added?**

There is a need to clearly establish the functional relationships in a NERC document. That is, all load must either be a BA or have a BA. Each BA must have an RA. And so on. With these relationships established, the requirements can be established for the RA and the RA can establish requirements for membership through contracts. This will help to get rid of some Regional differences.

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- 1) The OLDTF has definitions that need to be considered prior to finalizing this standard.
- 2) Operating limits that should be secured should include voltage collapse transfer limits in addition to equipment ratings violations.
- 3) Confidentiality of data needs to be addressed. Transmission line flows and generator outputs have commercial implications in real-time market-based systems. The Standard should recognize this concern.

### **46. Which form of the Standard do you prefer?**

The structure where the requirements are posed on TOP that are mirrors of RA functions are not appropriate because the RA is responsible. Should not be parallel authorities. Delegation will be dealt with another forum. Version B is not required. (This is not consistent among the commenters. Some prefer version B.

### **47. If you have comments on the format of the standard, please share them with us.**

- 1) Subtitles should be added to sectionalize the standard and a table of contents added.
- 2) Jim Byrd presented Functional model issues to the NERC PC/OC/MIC on March 19, 2003 in Birmingham and stated that one of the major issues with the Functional model is that the functions are perceived to be organizations. Jim stated that efforts will be made to clarify that the functions are not organizations. Since all references to functions, such as, RA, BA, PA, TOP, etc. are listed in standards documents as "entities" for convenience; for example, sentences begin: "The RA shall..." instead of "Entities responsible for RA functions shall...", all NERC standards documents should contain a clarification statement explaining that the functions are not organizations and that all references to the functions should be interpreted as "entities responsible for --- function".
- 3) All assumptions should be listed in the standards document.
- 4) Footnotes of definitions should be repeated for each requirement write-up.
- 5) There should always be at least two levels of non-compliance defined.

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### 1. The draft standard uses the term ‘data’ to allow for real, state-estimated or other calculated values. Do you agree?

#### Summary Consideration:

A clearer definition of the term “Data” is required. The revised standard reflects the adoption of the definition offered by George Bartlett with enhancements suggested by other commenters.

#### New Definition of Real-time Data:

Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values – may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol and or SCADA Data), and manually collected data

Roman Carter So Co Gen 3,5,6 (6 members)	No It is recommended that “data” mean something specific vs. a “very general” reference to items. Being more specific would provide for us to give a more definitive answer on whether we agree or not.
The revised standard includes more specificity in indicating what type of data is being addressed. (Data to be collected is either for real time monitoring, operational planning analyses or real time assessments.) The requirements for specifying and providing data assign the reliability authority the responsibility for clearly specifying what data it needs. This standard will not include a specification of what data must be exchanged.	
ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2	No ‘data’ should include real-time, state estimated, calculated or manually monitored values. It should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.
The recommended changes were adopted and are reflected in the revised definition.	
Lee Xanthakos SCE&G #1	No “data” is a subjective term that should be better defined
The term has been revised to reflect the consensus of the suggestions submitted.	
Raj Rana AEP #1,3,5,6	No “Data” should also include manually monitored values. That is the standard should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.
The recommended change was adopted and is reflected in the revised definition.	
George Bartlett Entergy Svcs 1	No The Standard should differentiate between real-time data and modeling data. We suggest the definition of “Real-time Data” should be “real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values”. “Modeling Data” should be values characteristic of the facilities modeled to determine or estimate the power system performance.
The standard has been revised to reflect the suggested distinction between real time data and modeling data. The suggestions for changes to real time data have been adopted. The term, ‘modeling data’ is not used in the revised standard. Where reference is made to data to support models, more clarity has been provided by listing the types of models.	
Francis Halpin BPA Bus Line #5,6	No The term ‘data’ as it applies to this standard should only be applicable to ‘real

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	<p>time' or 'actual metered' data.</p> <p>The term "actual" should be removed from the sentence reading "actual real time data associated with those limits". ACTUAL implies REAL and "real" data is only one of the several types of data which are being defined in the footnote as being included as "real time data". Suggestion: Simply use the phrase "real time data". That would make it easier to accept the definition of "data" described in footnote 2 as being "real, state estimated or other...etc".</p>
<p>There is also a need to address data that is collected to build models needed for real time monitoring, operational planning analyses and real time assessments.</p> <p>Your suggestion that the term, 'actual' be removed from the standard was adopted and is reflected in the revised standard.</p>	
<p>Doug Hils Mark Peter Cinergy #1</p>	<p>No</p> <p>"Data" should include manually entered values inputed from information received from person stationed at the site to monitor equipment.</p>
<p>The recommended change was adopted and is reflected in the revised definition.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>It is difficult to assess compliance if you are not specific in the intent. For each specific data type a clear requirement needs to be identified. Data types may include real, state-estimated, modeling or other types of data. Another point that needs to be considered is the accuracy and frequency of telemetered data.</p>
<p>The revised standard includes more specificity in indicating what type of data is being addressed. (Data to be collected is either for real time monitoring, operational planning analyses or real time assessments.) The requirements for specifying and providing data assign the reliability authority the responsibility for clearly specifying what data it needs. This standard will not include a specification of what data must be exchanged. Several commenters indicated that since real data may include manually collected data, the revised standard does not focus on accuracy and frequency of telemetered data.</p>	
<p>Compliance Sub Compl Mgrs</p>	<p>Varying interpretations occur if the term "real" is used in the Standards. Each time the term is used, the "writer" should consider explaining the meaning of the term.</p> <p>The term data should be explicitly defined. In the example above, the writer refers to real data, state-estimated data, and calculated data. State estimated data, calculated data, manually input data, etc. are also real.</p> <p>Consideration should be given to establishing a minimum performance or accuracy and frequency of update criteria for the calculated values and accuracy and frequency criteria of telemetered data values.</p>
<p>The revised standard includes more specificity in indicating what type of data is being addressed. (Data to be collected is either for real time monitoring, operational planning analyses or real time assessments.) The requirements for specifying and providing data assign the reliability authority the responsibility for clearly specifying what data it needs. This standard will not include a specification of what data must be exchanged. Several commenters indicated that since real data may include manually collected data, the revised standard does not focus on accuracy and frequency of telemetered data.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes/No</p> <p>Need to further define what real data means.</p>
<p>The term, 'real data' has is not used in the revised standard. The term, real-time data has been revised to reflect the suggestions of commenters.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes</p> <p>However, we question why the non-compliance levels for the first two requirements require actual data. You should be able to use state estimated or other calculated values as appropriate.</p>
<p>The standard has been revised to better align the requirements and measures with the definitions.</p>	

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William Smith Allegheny Pwr #1	Yes "Real" should include manually monitored values.
The recommended change was adopted and is reflected in the revised definition.	
Toni Timberman BPA #1	Yes Define 'real'
The word, 'real' is not used in isolation, it is used as a qualifier for 'data'. The definition of real time data has been updated based on the consensus of the comments submitted.	
Vern Colbert Dominion #1	Yes Data should be defined
The word, 'data' does mean different things in different parts of the standard. The revisions to the standard added more details so that the type of data being addressed should be clear wherever the word is used.	
Robert Reed TS (See List) Susan Morris SERC #2 Thomas Pruitt Duke #1	Yes 1) The TS agrees with the term "data" used, but it should be explicitly defined and quantified. 2) Consideration should be given to establishing a minimum performance or accuracy and frequency criteria for the "calculated values" and accuracy and frequency criteria of telemetered data values.
The revised standard includes more specificity in indicating what type of data is being addressed. (Data to be collected is either for real time monitoring, operational planning analyses or real time assessments.) The requirements for specifying and providing data assign the reliability authority the responsibility for clearly specifying what data it needs. This standard will not include a specification of what data must be exchanged. Several commenters indicated that since real data may include manually collected data, the revised standard does not focus on accuracy and frequency of telemetered data.	
Tom Petrich (5) PG&E #1	Yes There are other references to "actual" data. (For example, Requirement 1 states "The RA shall monitor real time system operating limits and compare these against actual data associated with those limits".) If "actual" data is the same as "real" data, then we suggest using the term "actual" data throughout the standard to avoid confusion in the future.
As suggested, the term 'actual' data was used synonymously with 'real' data in the first draft of this standard. The revised standard does not include the reference to 'actual' data.	
Susan Morris SERC #2 Thomas Pruitt Duke #1	Yes Footnotes should be repeated at least once for each requirement to remind the reader of the definition.
Definitions have been removed from the footnotes and appear at the beginning of the standard. This conforms with the new format for NERC's reliability standards. These definitions will be posted and balloted along with standard, but will not be restated in the standard. Instead, they will be included in a separate "Definitions" section containing definitions relevant to all standards that NERC develops.	
John Blazekovich Exelon #1,3,5,6	Yes With the understanding that the footnote explanations will remain in place
Definitions have been removed from the footnotes and appear at the beginning of the standard. This conforms with the new format for NERC's reliability standards. These definitions will be posted and balloted along with standard, but will not be restated in the standard. Instead, they will be included in a separate "Definitions" section containing definitions relevant to all standards that NERC develops.	
Ed Stein	Yes

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Joanne Borrell Ray Morella Firstenergy #1, 3, 6	As long as specified data includes manually calculated values. Data should include real-time, state estimated, calculated or manually monitored values. It should allow a Reliability Coordinator/Transmission Operator/Generator to station an individual at a plant or substation to directly monitor values.
The recommended change was adopted and is reflected in the revised definition.	
Peter Burke ATC #1	Yes May need better definition as to what “real time” data means (4 second scans, 30 second scans, etc) as this could have an impact on other sections of the standard.
The definition of real time data has been revised, but does not include a specific scan rate because many commenters wanted the expanded definition to explicitly include manually collected data. As a result of the comments submitted, the compliance elements of the revised standard do not focus on telemetry.	
Lloyd Linke MAPP #2	Yes The term data must be qualified as real time when real time data is being compared to short term operational limits.
The recommended change was adopted and is reflected in the revised definition.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1	Yes We agree however would urge the terms used in the standards be explicitly defined and quantified.
Definitions have been removed from the footnotes and appear at the beginning of the standard. This conforms with the new format for NERC’s reliability standards. These definitions will be posted and balloted along with standard, but will not be restated in the standard. Instead, they will be included in a separate “Definitions” section containing definitions relevant to all standards that NERC develops.	

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<p>Alan Boesch NPPD #1          Alan Johnson Mirant #6          Albert M. DiCaprio MAAC #2          Bob Burkard NCMPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          Ed Riley CA ISO #2          Fred Frederick Vectren #3          Gerald Rheault Manitoba #1,3,5,6          James Stanton Calpine #5          Joe Minkstein PG&amp;E #5          Joseph Buch Madison #4          Karl Kohlrus CWL&amp;P #5          Ken Skroback AL Elec Coop #4          Kim Warren IMO #2          Lee Westbrook Oncor #1          Mike Miller Southern Co #1          OLDTF (9?) 6 - #2 1 - #1,5          Richard Kafka Pepco #1          Richard Schwarz PNSC #2          Sam Jones ERCOT #2          Stuart Goza TVA #1          Todd Lucas (6?) Southern Co #1          Tony Jankowski We-Energies #4</p>	<p>Yes</p>
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**2. The draft standard uses the term ‘Reliability Analysis’ to mean those manual or automated studies, and system operator assessments. Reliability analyses includes both real time and operational planning analyses. Do you agree?**

**Summary Consideration:**

There seems to be consensus among commenters that the TOP should not be required to do an operational analysis, and that this measure only applies to RAs. The standard has been revised to reflect this, by omitting this requirement for the TOP.

Several commenters provided suggestions for improving the clarity of the term, ‘reliability analysis’. In the revised standard, the term, ‘reliability analysis’ is not used, instead either the term, ‘operational planning analysis’ or the term, ‘real-time assessment’ is used. Both of these terms will be posted for comment with the next draft of this standard.

<p>Compliance Mgrs Compl Subcomm</p>	<p>No</p> <p>RCs should be required to run (on-line/real-time automated studies and off line operational planning studies to identify and/or forecast bulk reliability concerns, but TOPs should not be subjected to such requirements.</p> <p>What is real time? Need to define “operational planning analysis”.</p> <p>There should be some qualifiers that define a NERC minimum periodicity to complete reliability analysis. The RA should establish their particular cycle for doing reliability analysis, and that information should be included in their Certification documentation.</p> <p>Need to define what types of analysis are expected: actual flows versus limits, contingency analysis of all possible contingencies? Analysis of only those conditions defined in the day-ahead or seasonal studies? Is the requirement to do a “reliability analysis” every day? Every shift? Everytime a change in system configuration demands etc.</p>
<p>The standard has been revised to require RAs (not TOPs) to perform operational planning analyses and real time assessments. The revised standard includes a minimum frequency for performing the operational planning analysis and for performing the real time assessments.</p> <p>The term operational planning analysis has been defined and will be posted for comment.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No</p> <ol style="list-style-type: none"> <li>1) RAs should be required to run (on-line/real-time) automated studies and off-line operational planning studies to identify and/or forecast bulk reliability concerns, but TOPs should not be subject to such requirements. The standard does not read as though manual analysis is sufficient, as it references “analysis tool” availability and then makes mention of “reliability analysis did not run” in multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement – particularly since the RAs will be required to use such tools anyway.</li> <li>2) What is the scope of the term “real time”? The footnote appearing on pg.1 of Version A defines “real time” but it is still not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to “real-time” conceptually imply data, or processes, or both?</li> <li>3) What is the definition and scope of “operational planning analysis”?</li> </ol> <p><b>(5)</b> It seems the Reliability Analysis definition above is an attempt to conceal the fact that many existing entities performing Reliability Authority Functions do not have a working state estimator. The RA should explain what type of</p>

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	<p>analysis tool(s), the frequency, the type of input data (off-line or real-time), etc. that is used to perform “reliability analysis”.</p> <p>(5) Why are the analysis requirements of the RA and the TOP identical? If this is true, why do we need an RA and a TOP?</p> <p>6) Why isn't there a standard for the TOP to provide telemetered data? There should be some type of performance standard established to assess the accuracy of telemetered data.</p>
<p>The standard has been revised to omit the requirement that the TOP run analyses.</p> <p>The first draft of the standard did contain a mismatch between its definitions and the application of those definitions in the standard. The revised standard does not include the footnote that was included in the first draft. In the revised standard, the use of manually collected data is acceptable.</p> <p>In the revised standard, there is a definition of ‘operational planning analysis’ and additional details that require this analysis be conducted at least once each day the next day’s projected system operating conditions.</p> <p>New definition: An analysis of the expected system conditions, given the peak load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions.</p> <p>In the revised standard, each RA must identify what data it needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area.</p> <p>The draft certification requirements for the TOP contain the following requirement:</p> <ul style="list-style-type: none"> <li>• Process/procedures and tools in place to provide transmission system information, in real-time, to the appropriate authorities.</li> </ul>	
<p>Thomas Pruitt Duke #1</p>	<p>No</p> <p>4) What is the scope of the term “real time”? The footnote appearing on pg.1 of Version A defines “real time” but it is still not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to “real-time” conceptually imply data, or processes, or both?</p> <p>5) What is the definition and scope of “operational planning analysis”?</p> <p>3) Why isn't there a standard for the TOP to provide telemetered data? There should be some type of performance standard established to assess the accuracy of telemetered data.</p>
<p>The first draft of the standard did contain a mismatch between its definitions and the application of those definitions in the standard. The revised standard does not include the footnote that was included in the first draft. In the revised standard, the use of manually collected data is acceptable.</p> <p>In the revised standard, there is a definition of ‘operational planning analysis’ and additional details that require this analysis be conducted at least once each day the next day’s projected system operating conditions.</p> <p>New definition: An analysis of the expected system conditions, given the peak load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions.</p> <p>The draft certification requirements for the TOP contain the following requirement:</p> <ul style="list-style-type: none"> <li>• Process/procedures and tools in place to provide transmission system information, in real-time, to the appropriate authorities.</li> </ul>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>This definition is too vague. Please elaborate to ensure that compliance is achieved. Please give specific examples</p>



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<p>In the revised standard, the term, 'reliability analysis' is not used, instead either the term, 'operational planning analysis' or the term, 'real-time assessment' is used. Both of these terms will be posted for comment with the next draft of this standard.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>It is difficult to assess compliance if you are not specific with the type of assessment and the time frame that needs to be address. For each case where a reliability analysis is required for compliance, a specific reference to real time or operational analysis needs to be defined. The references to real time analysis is not adequate, a better definition is required.</p>
<p>In the revised standard, the term, 'reliability analysis' is not used, instead either the term, 'operational planning analysis' or the term, 'real-time assessment' is used. Both of these terms will be posted for comment with the next draft of this standard.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No</p> <p>Such a broad definition that includes "real-time" and "operational planning" allows for a great amount of variability in what the RA must do to assess the security/reliability of the system. This results in difficulty in assessing and measuring compliance. E.g. – one RA may perform real-time studies whereas another may not. If this broad definition is adopted, then specific references in the standard to a "real time" or "operational planning" time frame as to when these analysis are performed is needed.</p>
<p>In the revised standard, the term, 'reliability analysis' is not used, instead either the term, 'operational planning analysis' or the term, 'real-time assessment' is used. Both of these terms will be posted for comment with the next draft of this standard.</p> <p>The revised standard includes a requirement that an operational planning analysis be conducted at least once each day to look at the day ahead, and that real-time assessments be conducted at least once every 30 minutes</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No</p> <p>We recommend substituting Reliability Analysis with operational planning analysis and real time assessment as appropriate to short term or long term studies. Also the term real time needs to be explicitly defined. Although the footnote appearing on page one of Version A defines "Real Time" it is still unclear if this is restricted to data extracted from the Energy Management Systems.</p>
<p>The recommended language substitution was adopted.</p> <p>A definition of real-time data has been updated and will be posted for comment with the revised draft standard.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>No</p> <p>See answer to question #1.</p> <p><i>{It is recommended that "data" mean something specific vs. a "very general" reference to items. Being more specific would provide for us to give a more definitive answer on whether we agree or not.}</i></p>
<p>The revised standard includes a new definition of real-time data that seems to meet the consensus of the comments received.</p> <p>New definition: Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values – may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol and or SCADA Data), and manually collected data</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes</p> <p>RAs should be required to run (on-line/real-time) automated studies to identify bulk reliability concerns, but TOPs should not be subject to such requirements. I don't believe the Standard reads as though manual analysis is sufficient, as it</p>

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	<p>references “analysis tool” availability and the makes mention of “reliability analysis did not run” in a multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement – particularly since the RAs will be required to use such tools anyway.</p>
<p>The standard has been revised to omit the requirement that the TOP run analyses.</p> <p>The first draft of the standard did contain a mismatch between its definitions and the application of those definitions in the standard. The revised standard does not include the footnote that was included in the first draft. In the revised standard, the use of manually collected data is acceptable.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes</p> <p>The footnote appearing on pg.1 of Version A defines “real time” but it is not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to “real-time” conceptually imply data, or processes, or both?</p>
<p>The first draft of the standard did contain a mismatch between its definitions and the application of those definitions in the standard. The revised standard does not include the footnote that was included in the first draft. In the revised standard, the use of manually collected data is acceptable as part of a real-time assessment.</p>	
<p>Vern Colbert Dominion #1</p>	<p>Yes</p> <p>Describe what a manual study will consist of. Reliability analysis should only be performed by the RA, not the TOP.</p>
<p>The revised standard does not use the term, ‘manual study.’ The term Reliability Analysis has been replaced by the terms, ‘operational planning studies’ and ‘real-time assessments to clarify what was intended.</p> <p>The standard has been revised to omit the requirement that the TOP run analyses.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>Yes</p> <p>I agree that the term should include both manual and automated process, however the standard did not read that way to me. Perhaps the drafting team should better clarify their intent in the standard</p>
<p>The first draft of the standard did contain a mismatch between its definitions and the application of those definitions in the standard. The revised standard does not include the footnote that was included in the first draft. In the revised standard, the use of manually collected data is acceptable.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>Yes</p> <p>Please define “operational planning analyses” as used in this standard.</p>
<p>The revised draft contains the following definition of an operational planning analysis:</p> <p>An analysis of the expected system conditions, given the peak load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Yes</p> <p>It is agreed that Reliability Analysis may include consideration of results of planning studies, however this proposal includes language which would require Transmission Operators to conduct these analyses along with RA’s. While large RTO’s performing TOP functions may have no problem acquiring system models and other tools with which to perform these studies, smaller TOP’s such as Coop, PUD’s and other non-jurisdictional TOP’s who may operate Transmission Systems may have neither the tools nor the staffing to do anything but use manual monitoring to maintain system reliability.</p> <p>The drafting team should assess the feasibility of this requirement being met by</p>

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	small non RTO participant TOP's.
The standard has been revised to omit the requirement that the TOP run analyses.	
Todd Lucas (6?) Southern Co #1	Yes Any entity that is operating or has functional control of a transmission system should be required to have offline as well as real time analysis tools.
The certification standards address the tools that entities must have in place.	
Alan Boesch NPPD #1 Alan Johnson Mirant #6 Albert M. DiCaprio MAAC #2 Bob Burkard NCMIPA1 # 3,4,5 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2 Ed Riley CA ISO #2 Ed Stein Firstenergy Sol #6 Fred Frederick Vectren #3 Gerald Rheault Manitoba #1,3,5,6 James Stanton Calpine #5 Joanne Borrell FirstEnergy Sol #3 Joe Minkstein PG&E #5 John Blazekovich Exelon #1,3,5,6 Joseph Buch Madison #4 Karl Kohlrus CWL&P #5 Ken Skroback AL Elec Coop #4 Kim Warren IMO #2 Lee Westbrook Oncor #1 Mike Miller Southern Co #1 OLDTF (9?) 6 - #2 1 - #1,5 Peter Burke ATC #1 Raj Rana AEP #1,3,5,6 Ray Morella FirstEnergy #1 Richard Kafka Pepco #1 Richard Schwarz PNSC #2 Sam Jones ERCOT #2 Stuart Goza TVA #1 Tom Petrich (5) PG&E #1 Toni Timberman BPA #1 Tony Jankowski We-Energies #4 William Smith Allegheny Pwr #1	Yes

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3. This draft standard assumes that data needed to run reliability analyses has been provided as part of certification for the RA and/or TOP functions. This standard only addresses the changes to this “base data” that occur following the certification award – such as additions, deletions, or other changes to system facilities that would impact the accuracy of models used to monitor and assess the bulk transmission system. The intent is to minimize unnecessary documentation. Do you agree with this assumption?

Summary Consideration:

There was no consensus on this issue, and the revised Certification SARs don’t include a requirement for the provision of base data. The standard was revised to include a broader range of data, but does not include a specific list of data that must be provided. The requirement that the TOP also collect data has been omitted from the revised standard. Several entities indicated that data, beyond facility data, is needed to accurately monitor and assess the system, and references to ‘facilities’ have been omitted from the standard, allowing the RA to specify a broader range of data requirements to support its real-time monitoring, operational planning analyses and real-time assessments.

<p>Susan Morris SERC #2 Robert Reed TS (See List) Compliance Mgrs Compl Subcomm</p>	<p>No</p> <p>(6) The focus is only on providing specifications for the data required. It appears to be unclear that there is no requirement to actually provide the real-time data. For example, the TOPs are required to specify and require data, but they do not appear to be required to actually PROVIDE data to RAs.</p> <p>2) The certification process for the RA/TOP is not the proper means to obtain correct modeling data. It may be appropriate for real-time metering data, but much of the static data for system modelling and analysis is the same as the planning function. It should be consistent with those modelling requirements also.</p> <p>3) The standard does not distinctly identify the areas of responsibility between the Reliability Authority and the Transmission Operator. Application of the standard to multiple parties (“Authorities”) should clearly delineate the primary source of responsibility and ownership of any data, information, control and responsibility. What follows in the Standard are many requirements that duplicate the RA and TOP responsibilities – who has the primary responsibility/requirement/authority for each?</p> <p>4) The only provision in this standard is that data on new facilities must be provided seven days before it is energized. If operational planning studies have a scope of greater than seven days (possibly one year), then a seven-day notice is inadequate for these studies. There appears to be a requirement to have a standard that requires entities to provide the base data used to populate the models, in addition to the requirement to provide information on changes.</p> <p>5) All assumptions should be listed in the Standard's document.</p>
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The revised standard does include a requirement that the TOP provide data to its RA.

Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.

The revised standard does not include any requirements for the TOP beyond the requirement to provide data to its requesting RA. All of the other TOP requirements were dropped from the revised standard.

The operational planning studies being addressed in this standard are ‘next day’. The requirement that data be provided 7 days in advance of new facilities was dropped as a result of the comments submitted. The revised standard requires the RA to develop a data specification and distribute this to the entities that have facilities the RA monitors. The RA must identify when it needs data.

The standard format does not include a section for assumptions. Based on the comments submitted, additional details were added to the standard that should eliminate the need for a list of assumptions.

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<p>Thomas Pruitt Duke #1</p>	<p>No</p> <p>(6 The data assumptions and the intent of this question are not clearly stated</p> <p>2) The certification process for the RA/TOP is not the proper means to obtain correct modeling data. It may be appropriate for real-time metering data, but much of the static data for system modelling and analysis is the same as the planning function. It should be consistent with those modelling requirements also.</p> <p>3) All assumptions should be listed in the Standard's document.</p>
<p>The revised standard does include a requirement that the TOP provide data to its RA.</p> <p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.</p> <p>The revised standard requires the RA to develop a data specification and distribute this to the entities that have facilities the RA monitors. The RA must identify when it needs data.</p> <p>The standard format does not include a section for assumptions. Based on the comments submitted, additional details were added to the standard that should eliminate the need for a list of assumptions.</p>	
<p>Sam Jones ERCOT #2</p>	<p>No</p> <p>It is unclear whether the certification process will address the provision of the data. If it does, then we agree with this. If it does not, then we need to ensure somewhere, perhaps in this standard, that the data is indeed provided.</p>
<p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No</p> <p>The certification standard for all NERC Reliability Model functions should rely on the reliability standard itself to describe the particular requirements. A certification standard should only assess on a general level whether a reliability function is capable of performing its intended function(s). The Operating Within Limits Standard must – on its own – detail the exact data requirements for all RAs and TOPs and not have to rely on a Certification Standard to provide the data. In fact, the Certification Standard(s) should reference the Operating Within Limits Standard (and other applicable standards) to obtain the needed data for certification.</p>
<p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>No</p> <p>Manitoba Hydro agrees that this Standard has to address the requirement for updating the data in a timely fashion. However we believe that the requirement for “base data” is not and should not be addressed in the certification process. The requirement for the “base data” should be included in this Standard. The process to be defined by the RA and TOP to obtain data for reliability analysis purposes should address both “base data” and changes to this data to ensure accuracy of the models used for reliability analysis.</p>
<p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5  David Kiguel</p>	<p>No</p> <p>The certification process for the RA/TOP is in itself an insufficient vehicle to attain correct modeling data. It is felt that the submission of data reflecting changes to the system may reduce documentation but may unnecessarily restrict the RA's to a potentially incomplete data collection process. For example, in some cases the RA may choose to create study models as new base cases on a seasonal basis.</p>

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Hydro One #1	Therefore, the exchange of information has to be handled differently to ensure all parties receive the information in a timely manner such that the operating models in adjoining regions do not lead to different results.
Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.	
George Bartlett Entergy Svcs 1	No This standard is for assuring the power system is operated within transmission limits. The functional responsibilities should be contained in this standards, not a certification standard. If necessary, the standard for certifying an “entity” to perform certain functions, like operating within transmission limits, should reference this document to assure the entity can be certified to perform those functions. Therefore, this standard should address base data and changes to that data.
Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.	
Alan Boesch NPPD #1	No This is not included in the scope of the RA certification functions. The RA certification fuction will verify if the processes and procedures are in place to preform the analysis. The certification SAR drafting team will depend the standards to assure that the appropriate data is available.
Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.	
Tony Jankowski We-Energies #4	No This assumption will not minimize unnecessary documentation. To be able to measure, one would have to identify the “Base Data” in order to determine what has changed. There will need to be documentation on the Base Data as well. The Standard should not assume some required Data is monitored or measured outside the Standard.
Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.	
Raj Rana AEP #1,3,5,6	No This standard should define the minium type of data that is to be provided to the RA, similar to Policy 4B and Appendix 4B requirements today. Additionally, we disagree with the proposal that TOP functions need to be certified and stated such during the first comment period for the organizational SARs.
The comments received from the industry indicated that there are many different types of data needed by the RA to support real time monitoring, operational planning analyses and real time assessments. Rather than identify specifically what data must be provided, we revised the requirement to indicate that each RA must specify what data it needs.	
John Blazekovich Exelon #1,3,5,6	No Verification of “base data” should be included/required upon request on a case by case basis to validate studies
The standard was revised to exclude references to ‘base data.’ With the revised standard, each RA must specify what data it wants, the time frame in which the data must be supplied, and must come to an agreement on the ‘acceptable format’ for providing that data.	
ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2	No (1) This assumption needs to be clearly stated at the front end of the standard. (2) The standard should define the data that needs to be provided similar to NERC Appendix 4B – Electric System Security Data.

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<p>The standard format does not include a section for assumptions. Based on the comments submitted, additional details were added to the standard that should eliminate the need for a list of assumptions.</p> <p>The comments received from the industry indicated that there are many different types of data needed by the RA to support real time monitoring, operational planning analyses and real time assessments. Rather than identify specifically what data must be provided, we revised the requirement to indicate that each RA must specify what data it needs.</p>	
<p>Compliance Mgrs Compl Subcomm</p>	<p>No</p> <p>What is meant by “Real time Monitoring”? Does this refer to computer updated data a System Operator will use? If data is updated every 10 minutes, or once an hour, or once a shift, is it Real Time? If a quantity is only updated once a week or once a year, is it considered Real Tim Data? The writer must be able to describe what is meant by “Real time” so that the standard can be consistently measured.</p>
<p>Real time monitoring:</p> <p>To use vision and hearing to scan various real-time data sources and draw conclusions about what the data indicates. Having the ability to scan real time data as conditions dictate.</p> <p>In this revised standard, the RA is required to monitor system parameters, in real-time, to determine if interconnection reliability operating limits have been exceeded. The standard does not include technical requirements for updating telemetry data.</p>	
<p>Ken Skroback AL Elec Coop #4</p>	<p>No</p> <p>These assumptions work in the new NERC model but don’t apply to a small utility (G &amp; T) that is not separated and serves as its own control area. Since non separated utilities are prevented from receiving data from RA’s, some of these studies are conducted by the RA using data provided by us to them</p>
<p>The standard has been revised to require that the RA provide a specification for the data it needs and provide this specification to those entities with facilities monitored by the RA. The entities with facilities monitored by the RA are required to provide the RA with the specified data.</p> <p>The data being addressed in this standard is needed for reliability, not for commercial purposes. Please review the revised requirements and let us know if the revised requirements are acceptable.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>No</p> <p>Assumptions should be avoided, and drafting team should better clarify their intent in the document.</p>
<p>The standard format does not include a section for assumptions. Based on the comments submitted, additional details were added to the standard that should eliminate the need for a list of assumptions.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>Why is it necessary to make sure that updates are provided for? The RA/TOP certification process should be enough to ensure that the entity is performing the functions including updates. To add this requirement adds a layer of compliance which is redundant and not required.</p>
<p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA. (Although adding this data collection requirement to the certification process was suggested by this SDT, it was not adopted in the revised certification SARs.)</p> <p>In the revised standard, the RA is not required to ‘request’ data – rather the RA is required to ‘specify’ what data it needs.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>This issue is unclear. It is not clear in the Standard as to the nature of the data required. Is this data static, telemetered or modeling data. We are interpreting one requirement to mean that the RA will identify that data collected and provided for reliability analysis. This is not to say the an RA may request data on an as needed bases to perform the reliability analysis. Where is the role of the Compliance</p>

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	Monitor defined?
<p>The standard has been revised to require that the RA provide a specification for the data it needs and provide this specification to those entities with facilities monitored by the RA. The entities with facilities monitored by the RA are required to provide the RA with the specified data. The data is data needed to support real time monitoring, operational planning analyses or real time assessments.</p> <p>The Compliance Monitor is a function in the Functional Model, currently performed by the Regional Reliability Organizations. <i>“An entity of the NERC Region Organization that performs the functions of reviewing and ensuring compliance with NERC Reliability Policies and Standards, and of administering sanctions or penalties for non-compliance to standards.”</i></p>	
Francis Halpin BPA Bus Line #5,6	<p>No</p> <p>In order to accurately model system operations for reliability analysis, the RA should have data relating to the intended actual operation of system facilities. While revisions to the base data will certainly be necessary for system modeling, additional near real time operational data must be considered even if there is no change to facilities or to the base data. The standard should make it clear that additional data, above and beyond that provided as base data may be required of facility owners.</p>
<p>The standard has been revised to require that the RA provide a specification for the data it needs and provide this specification to those entities with facilities monitored by the RA. References to base data and data associated with new or changed facilities have been dropped from the revised standard. In the revised standard, the entities with facilities monitored by the RA are required to provide the RA with the specified data. The revised standard clarifies that this is data needed to support real time monitoring, operational planning analyses or real time assessments.</p>	
Roman Carter So Co Gen 3,5,6 (6 members)	<p>No</p> <p>See answer to question #1.</p> <p><i>It is recommended that “data” mean something specific vs. a “very general” reference to items. Being more specific would provide for us to give a more definitive answer on whether we agree or not.</i></p>
<p>In the revised standard, when ‘data’ is used, additional details have been provided to clarify what type of data is being addressed.</p>	
FRCC	<p>No</p> <p>The certification process for the RA or TOP is not the place to ensure that correct modeling data is supplied by operating entities. The requirement for obtaining initial data, and future changes to data needs to reside in one standard.</p> <p>In addition the draft standard only requires 7 days prior to the energization of new facilities for data to be submitted. This short time frame may not be enough for operational planning studies that may go out as far as 12 months. Perhaps NERC should not make this requirement, but leave it up to the Region or Reliability Authority to determine what the appropriate notification time is.</p>
<p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA.</p> <p>References to data associated with new or changed facilities have been dropped from the revised standard. In the revised standard, the entities with facilities monitored by the RA are required to provide the RA with the specified data in the time frame specified by the RA and in a mutually agreed upon format. The revised standard clarifies that this is data needed to support real time monitoring, operational planning analyses or real time assessments.</p>	



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<p>Peter Burke ATC #1</p>	<p>Yes Agree as long as there is an acceptable definition provided during the certification studies for the required data needed for analysis. Concern that loss of any data will be seen as a violation when in fact data redundancy inherent in the system allows reliable operation of the system even with loss of some data.  The attempt to reduce the burden is appreciated.</p>
<p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA. The revised certification SARs do not include a requirement for provision of 'base data.'</p> <p>In the revised standard, there is less compliance focus on telemetry as a result of your comment and comments from others who voiced a concern about penalties associated with loss of data and the difficulties inherent in trying to assess compliance with such a measure.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes The focus is only on providing specifications for the data required. There appears to be a hole in that no requirement to actually provide the real-time data is spelled out. For example, the TOP's are required to specify and require data, but they don't appear to be required to actually PROVIDE data to RAs.</p>
<p>The standard has been revised to include a requirement that TOPs provide data.</p>	
<p>Ray Morella Ed Stein FirstEnergy #1, 6</p>	<p>Yes This assumption needs to be clearly stated at the front end of the standard.</p>
<p>The standard format does not include a section for assumptions. Based on the comments submitted, additional details were added to the standard that should eliminate the need for a list of assumptions.</p>	
<p>Joseph Buch Madison #4</p>	<p>Yes My understanding of the process is that for a RA or TOP to be certified they would need to demonstrate among other things that they already have the required "base" data. Thus this standard only covers changes/new additions. However, the standard does not define what is existing. Included in the standard should be a definition of existing facilities. It is recommended that the following or something similar be added to clearly define existing facilities. "Facilities that are already energized as of the day the standard is approved or the date the RA or TOP is certified are considered existing facilities."</p>
<p>Many commenters indicated that certification is not the place to collect data, and the standard was revised to expand the scope of data to be specified and collected by the RA. The revised certification SARs do not include a requirement for provision of 'base data.'</p> <p>The standard has been revised to require that the RA provide a specification for the data it needs and provide this specification to those entities with facilities monitored by the RA. References to base data and data associated with new or changed facilities have been dropped from the revised standard. In the revised standard, the entities with facilities monitored by the RA are required to provide the RA with the specified data. The revised standard clarifies that this is data needed to support real time monitoring, operational planning analyses or real time assessments.</p>	
<p>Darrel Richardson Illinois Power #1, 3</p>	<p>Yes We agree as long as "other changes" includes day-to-day significant changes to the bulk transmission system.</p>

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<p>The standard has been revised to require that the RA provide a specification for the data it needs and provide this specification to those entities with facilities monitored by the RA. References to base data and data associated with new or changed facilities have been dropped from the revised standard. In the revised standard, the entities with facilities monitored by the RA are required to provide the RA with the specified data. The revised standard clarifies that this is data needed to support real time monitoring, operational planning analyses or real time assessments.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes Need to allow for requesting additional data not previously requested for the original database, but not necessarily associated with a new facility. Very often a State Estimator or Operational Planning studies will identify the need for additional information for an area where the solution is not as good as desired, and additional information for existing facilities to improve the model or additional real-time measurements will be requested to allow a better solution.</p>
<p>The standard has been revised to require that the RA provide a specification for the data it needs and provide this specification to those entities with facilities monitored by the RA. References to base data and data associated with new or changed facilities have been dropped from the revised standard. In the revised standard, the entities with facilities monitored by the RA are required to provide the RA with the specified data. The revised standard clarifies that this is data needed to support real time monitoring, operational planning analyses or real time assessments.</p>	
<p>Alan Johnson Mirant #6 Albert M. DiCaprio MAAC #2 Bob Burkard NCMIPA1 # 3,4,5 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 Ed Riley CA ISO #2 Fred Frederick Vectren #3 James Stanton Calpine #5 Joanne Borrell FirstEnergy Sol #3 Joe Minkstein PG&amp;E #5 Karl Kohlrus CWL&amp;P #5 Kim Warren IMO #2 Lee Westbrook Oncor #1 Mike Miller Southern Co #1 Richard Kafka Pepco #1 Roger Green Southern Co #5 Stuart Goza TVA #1 Todd Lucas (6?) Southern Co #1 Tom Petrich (5) PG&amp;E #1 Vern Colbert Dominion #1 William Smith Allegheny Pwr #1</p>	<p>Yes</p>

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4. The draft standard uses the term “Industry Accepted Format” to mean a generally accepted format used by the electric power industry to specify the parameters that must be addressed in development of the system model and/or to transmit data. Do you agree?

### Summary Consideration:

The consensus of the commenters indicated that there is no “industry standard” data format. The standard has been revised to use the term, “mutually agreeable format.” This enables each RA to work with the entities that must supply it data and come up with a format that works for them. This seemed like the least costly identified alternative that would still result in the RA getting the data it needs from those entities that own that data, without giving the RA dictatorial rights.

Toni Timberman BPA #1 Richard Schwarz PNSC #2	No an “Industry Accepted Format” does not exist.
Most commenters agreed with you, and the term has been replaced with the term, ‘mutually agreeable format’.	
Roman Carter So Co Gen 3,5,6 (6 members)	No See answer to question #1. <i>{It is recommended that “data” mean something specific vs. a “very general” reference to items. Being more specific would provide for us to give a more definitive answer on whether we agree or not.}</i>
The standard has been revised to add more specificity to clarify what types of data are being addressed.	
Charles Yeung Reliant Energy #6	No The term “Industry Accepted Format” may be interpreted to be RTO established, Regional Reliability Council established or some standards setting organization (non-NERC) established format. The Standard should either specify the format – or if a single format is not applicable for the entire North America, then the Standard should provide enough direction for those who must comply with its requirements as to where/who will specify the format.
The standard was revised to indicate that each RA must specify a ‘mutually agreeable format’ for the data it is collecting. The intent is to enable each RA to work with the entities that must supply it with data, and develop a format that works for them. Specifying a single format seemed like it would be very costly to implement for many entities, and wouldn’t necessarily lead to an improved ability to control the electric system so it stayed within interconnection reliability operating limits.	
Kathleen Goodman ISO NE #2	No Each RA/TOP should use whatever format that is acceptable to its constituencies.
The revised standard adopts this concept.	
John Blazekovich Exelon #1,3,5,6	No In cases where the data format is not stipulated by tariff or connection requirements, a mutually agreed to format be determined. In cases where parties cannot come to mutual agreement NERC should provide minimum standards.
The revised standard adopts the concept of having a mutually agreeable format, but doesn’t include a provision for NERC to establish minimum standards.	
Gregory Campoli NY ISO #2	No It is not clear who defines the “Industry Accepted Format”. It should state that the Industry accepted format should be a mutually agreed upon format defined by the individuals that are exchanging data. This format must not be

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	prescriptive.
The revised standard adopts the concept of having a mutually agreeable format.	
Alan Johnson Mirant #6	This term is too vague to be utilized in the standard. At a minimum, the term should reference another standard (developed by NERC and/or NAESB) where the “standard” format is fully described. As the term is used within the standard, it seems that potentially, each RA could specify a different meaning. This is something that must be avoided.
The revised standard adopts the concept of having a mutually agreeable format. This seems a compromise from having a requirement that is interpreted as being overly restrictive to suit some RA’s needs, and not detailed enough to meet another RA’s needs. By requiring that the format be ‘mutually agreeable’, the desire is to put some level of assurance that each RA will specify a format that doesn’t place an unfair burden on other entities	
Compliance Mgrs Compliance Sub	Yes ...as long as this does not lead to the creation of another “industry accepted format” or require a significant change from the way data has routinely been exchanged in the past. (typically using PSS/e or PSLF powerflow raw-data formats for representational data, etc.)
The revised standard adopts the concept of having a mutually agreeable format. If entities are currently exchanging data in a manner that results in the RA obtaining the data it needs (to do real time monitoring, operational planning analyses and real time assessments) in a mutually agreed upon format and in a time frame that is acceptable to the RA, then there shouldn’t be a need for significant changes. The SDT is concerned that some RAs may not have a data specification and may need to invest resources in developing one.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1	Yes Yes, however “Industry Accepted Format” must not be overly perscriptive and must not preclude mutually agreed upon data exchange methods between adjoining areas. Also how is it proposed to handle “proprietary data”?
The revised standard adopts the concept of having a mutually agreeable format. The RA Certification standard includes a requirement that the RA sign a confidentiality agreement.	
Darrel Richardson Illinois Power #1, 3	Yes We agree as long as the term “generally accepted” implies that the format is specific but that the acceptance is by the majority of the industry.
The revised standard adopts the concept of having a mutually agreeable format. This was proposed by several commenters and seemed to achieve the desired objective without going as far as requiring the adoption of a single method by the majority of the industry.	
Gerald Rheault Manitoba #1,3,5,6	Yes Manitoba Hydro believes that as much as possible the appropriate Standard should specify what the acceptable format should be. For parameters where this is not possible the term “Industry Accepted Format” should be acceptable.
The revised standard adopts the concept of having a mutually agreeable format. This was proposed by several commenters and seemed to achieve the desired objective without going as far as requiring the adoption of a single method by the majority of the industry.	
Francis Halpin BPA Bus Line #5,6	Yes The industry accepted format should be arrived at by industry consensus.
The revised standard adopts the concept of having a mutually agreeable format. This was proposed by several commenters and seemed to achieve the desired objective without going as far as requiring the adoption of a single method by the majority of the industry.	

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<p>Tom Petrich (5) PG&amp;E #1</p>	<p>Yes Since there are numerous formats that can be qualified as “Industry Accepted Formats”, the entities performing the related RA, BA, TOP, IA, TOW, Generator functions should agree on a set of common formats to be used for data exchange to avoid unnecessary duplication of work.</p>
<p>The revised standard reflects the adoption of this suggestion.</p>	
<p>Robert Reed TS (See List) Susan Morris SERC #2 Thomas Pruitt Duke #1</p>	<p>Yes ...as long as this does not lead to the creation of another “industry accepted format” or require a significant change from the way data has routinely been exchanged in the past. (typically using PSS/e or PSLF powerflow raw-data formats for representational data, etc.)</p>
<p>The revised standard adopts the concept of having a mutually agreeable format. This was proposed by several commenters and seemed to achieve the desired objective without going as far as requiring the adoption of a single method by the majority of the industry.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes Agree as long as this does not lead to a new industry accepted format or a change in the currently accepted formats currently used for data exchange.</p>
<p>The revised standard adopts the concept of having a mutually agreeable format. This was proposed by several commenters and seemed to achieve the desired objective without going as far as requiring the adoption of a single method by the majority of the industry.</p>	
<p>Ray Morella FirstEnergy #1 Ed Stein Firstenergy Sol #6</p>	<p>Yes This assumption needs to be clearly stated and also should be similar to 4B of NERC policy</p>
<p>The standard format does not include a section for assumptions. Based on the comments submitted, additional details were added to the standard that should eliminate the need for a list of assumptions. The revised standard adopts the concept of having a ‘mutually agreeable format.’ rather than an ‘industry accepted format.’ The data requirements in Operating Policy 4B aren’t likely to be an exact match to what any one RA needs, but may serve as a good starting point for an RA that doesn’t have a data specification and needs to develop one.</p>	
<p>Peter Burke ATC #1</p>	<p>Yes Who will develop this “Industry Accepted Format” and what is the timeline for that development? Is there one “Industry Accepted Format” or are we at the mercy of industry giants who may want their “format” used? Is there another team working on development?</p>
<p>The revised standard adopts the concept of having a ‘mutually agreeable format.’ rather than an ‘industry accepted format.’</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>Yes We agree with the requirement so long as an existing “Industry Accepted Format” is used and a new one is not created.</p>
<p>The revised standard adopts the concept of having a ‘mutually agreeable format.’ rather than an ‘industry accepted format.’</p>	
<p>Fred Frederick Vectren #3</p>	<p>Yes This is an area of concern for many. In the past there was an IEEE standard interchange format to share power flow data. Recently there have been numerous upgrades in power flow modeling programs and their associated data structures. Unfortunately the IEEE standard format has not kept pace. At the other extreme are program developers that insist on changing data</p>

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	<p>structures on nearly a regular basis to provide program “enhancements”. This creates conversion problems for those using older or different power flow programs. A standard data interchange data model needs to be developed to allow free interchanging of model data between different programs. The structure would only be changed through committee agreement. If this cannot be achieved, program developers should be required to provide data structure information and make it available to any party upon request. The data structure should also allow programs to be backward compatible. That is a newer program should always be able to read an older data format and perform satisfactorily.</p>
<p>The revised standard adopts the concept of having a ‘mutually agreeable format.’ rather than an ‘industry accepted format.’ Many commenters wrote and indicated that there are many different types of data needed to support real time monitoring, operational planning analyses and real time assessments. Specifying a single data format for the entire industry seemed more than what is needed to ensure that each RA has the data it needs.</p>	
<p>Albert M. DiCaprio MAAC #2</p>	<p>Yes</p> <p>The definition could lead some to believe that there is a pre-defined format somewhere. A more acceptable phrase would be “mutually agreeable format”. That way if a new format were to arise that the RA wants to use and the data suppliers are willing to use, then NERC should not care what format is used.</p> <p>As long as the definition recognizes the agreement between the consenting parties to mean ‘Industry accepted” then there is no issue.</p>
<p>Based on the many comments received, there were many different interpretations of what was meant by ‘industry accepted format’. Based on these comments, the standard has been revised as you and several others suggested, and uses the term, ‘mutually agreeable format.’</p>	

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<p>Alan Boesch NPPD #1          Bob Burkard NCMIPA1 # 3,4,5          Dilip Mahendra SMUD #1          Doug Hils Cinergy #1          ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2          Ed Riley CA ISO #2          FRCC 6-#1, 4-#2, 1-#2          James Stanton Calpine #5          Joanne Borrell FirstEnergy Sol #3          Joe Minkstein PG&amp;E #5          Joseph Buch Madison #4          Karl Kohlrus CWL&amp;P #5          Ken Skroback AL Elec Coop #4          Kim Warren IMO #2          Lee Westbrook Oncor #1          Lee Xanthakos SCE&amp;G #1          Lloyd Linke MAPP #2          Mike Miller Southern Co #1          OLDTF (9?) 6 - #2 1 - #1,5          Raj Rana AEP #1,3,5,6          Richard Kafka Pepco #1          Sam Jones ERCOT #2          Stuart Goza TVA #1          Tony Jankowski We-Energies #4          Vern Colbert Dominion #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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**5. Based on the above graph, do you agree with the concept that operation within the “yellow zone” is exceeding an operating limit, but not a reportable violation?**

Summary Consideration:

Several commenters indicated that the SDT should consider the work of the OLDTF, and that has been done. The basic concepts of the OLDTF and the SDT are the same, but there are some differences between the OLDTF work and the SDT work.

The chart has been revised to more clearly indicate which events must be documented and which events must be both documented and reported.

No – Comments indicating we should wait for OLD TF	
FRCC 6-#1, 4-#2, 1-#2	No There are too many “irons in the fire” just now. The NERC OC has a task force working on this particular issue, and as indicated in the March OC meeting highlights, have directed the Reliability Coordinators to “field test” the OLDTF’s definition and reporting form.
<p>The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.</p> <p>This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.</p> <ul style="list-style-type: none"> <li>– The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique T<sub>v</sub>.</li> </ul> <p>The data required by the OLDTF is more extensive than the data required by this standard.</p> <p>As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.</p>	
OLDTF (9?) 6 - #2 1 - #1,5	No Please refer to the Operating Limits Definition Task Force report, “NERC Operating Limit Definitions and Reporting.” The Task Force considers this report to be an integral part of its comments to Standard Drafting Team.  The OLDTF has defined “Limit Compliance Violation” for reporting IRL violations to the Regional Council and NERC.
<p>The specific terms recommended in the OLDTF report have not been adopted, but the concepts have been adopted. The terms used by the OLDTF were considered somewhat confusing and not in concert with terminology used in other new reliability standards, and that is why they weren’t adopted.</p>	
Vern Colbert Dominion #1 Thomas Pruitt Duke #1 Susan Morris SERC #2 Robert Reed TS (See List)	No Wait until the OLDTF defines this.



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The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.

This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.

- The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique T<sub>v</sub>.

The data required by the OLDTF is more extensive than the data required by this standard.

As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.

<p>Guy Zito (See List)                  NPCC #2 – 2                  NPCC #1 – 5                  David Kiguel                  Hydro One #1</p>	<p>No                  This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.</p>
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The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.

This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.

- The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique T<sub>v</sub>.

The data required by the OLDTF is more extensive than the data required by this standard.

As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.

<p>Gregory Campoli                  NY ISO #2</p>	<p>No                  Responses to this portion of the standard should be delayed until a response is provided by the NERC Operating Limit Definition TF.</p>
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The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.

This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.

- The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique T<sub>v</sub>.

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As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.

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<b>No – Comments about graph details</b>	
Doug Hils Cinergy #1	No The visual is a good follow up to a limit violation but needs text to document what the chart is for, without these questions the chart is of little usage. Chart leaves question as to the actual exceeding of the operating limit, label placement would allow for individual interpretation, is the limit the heavy green line, the demark between the green background and the red and yellow areas?
The chart has been revised to include additional specificity as suggested.	
John Blazekovich Exelon #1,3,5,6	No The above graph is not clearly defined, cannot determine what kind of limit(s) are being demonstrated (thermal, stability). More clarification needed before the question can be answered.  Not sure why this is asked in this standard when one of the Explanations of Terms explains that the definitions of system operation limits and operating limit violations is being developed by the Facility Ratings SAR. Shouldn't the definition of a violation eliminate the need to ask this question?
The chart has been revised to include additional specificity as suggested.  The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (Facility Ratings Standard) includes requirements for defining these elements but does not include the term, 'violation'. The Monitor and Assess Short-term Reliability – Operate Within Transmission Limits Standard (Operate within Limits Standard) addresses adherence to limits and addresses non-compliance for operating in a manner that exceeds a subset of the system operating limits. The revised standard introduces some new terms to clarify which system operating limits are being addressed in the standard.	
George Bartlett Entergy Svcs 1	No There is not enough information to understand the chart nor to answer this question. Operating above a limit in an event the duration of which is less than the time frame upon which the limit is calculated does not seem to be a reportable violation. We are not sure what the dashed line represents. We agree that an operating limit could be exceeded for a short time, but less than the time frame upon which the limit is based, and not be considered a reportable violation.
The chart has been revised to include additional specificity as suggested. The revised standard attempts to better define which instances of exceeding system operating limits must be documented and which instances of exceeding system operating limits must be both documented and reportable. The revised standard addresses a subset of the system operating limits called, "Interconnection Reliability Operating Limits." Each of these limits is identified by the RA and has both a magnitude and a duration component. If the limit is exceeded for any length of time, the instance must be documented. Only those instances where the limit has been exceeded for a time greater than the defined duration must be reported.	
Lee Westbrook Oncor #1	Graph needs more information to clarify question.
The chart has been revised to include additional specificity as suggested.	
Bob Burkard NCMPA1 # 3,4,5	The graph needs additional information – axis label, d, etc.
The chart has been revised to include additional specificity as suggested.	
Ken Skroback AL Elec Coop #4	The above graph is unlabeled and I can't tell anything about it.
The chart has been revised to include additional specificity as suggested.	
Karl Kohlrus	To me the graph is unclear. For someone who has not seen this graph

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CWL&P #5	before, it is not obvious what it is trying to show. That is, are the bad areas along the x or y axis? It would be better to have a graph with three regions: the allowable (green) region within a deadband, a yellow region that may need documentation, and a red region that is a reportable violation. For example, if a quantity has a deadband of -100 to +100, a yellow range may go from -110 to -100 and from +100 to +110, while the red range may be anything less than -110 and greater than +110.
The chart has been revised to include additional specificity as suggested.	
Joseph Buch Madison #4	The graph is not clear and does not define whether a normal or emergency operating limit is exceeded. The graph appears to indicate that the loading on a line is not a reportable violation if the load is reduced to the normal or acceptable level within a defined period of time. If the loading on the line is within the yellow range because of normal flows on an intact system and the next single contingency causes the loading to increase to a level that causes instability, uncontrolled separation or cascading outages then I would consider operation within the yellow zone a reportable violation.
The chart has been revised to include additional specificity as suggested. The revised standard does not distinguish between 'normal' and 'emergency' operating limits. The limits being addressed in this standard are the subset of all system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. In the revised standard these are called Interconnection Reliability Operating Limits (IROLs). Each IROL has both a magnitude and a duration component called the limit's $T_v$ . The RA identifies a $T_v$ for each IROL– for some IROLs this may be 40 minutes, for others it may be 10 minutes, for others this may be two hours. If the next single contingency were to cause instability, uncontrolled separation or cascading outages, then the $T_v$ would be expected to be very short. More likely, if the next contingency would lead to cascading outages, then exceeding the limit would be expected to move into the 'red' zone.	
No – Comments with suggestions for improving definitions	
Sam Jones ERCOT #2	Yes/No  It is unclear which context applies to "reportable violation". If the violation being reported to NERC is the context, then this may be true only if the limit being monitored is an IRL (old OSL). It is true that the graph depicts an operating limit being exceeded. Whether it is reportable depends upon the context of whether it may be internally reportable on a Region basis, or whether it is intended to refer to reportable to NERC.
The chart has been revised to include additional specificity as suggested. The revised standard attempts to better define which instances of exceeding system operating limits must be documented and which instances of exceeding system operating limits must be both documented and reportable. The revised standard addresses a subset of the system operating limits called, "Interconnection Reliability Operating Limits." Each of these limits is identified by the RA and has both a magnitude and a duration component called $T_v$ . If the limit is exceeded for any length of time, the instance must be documented. Only those instances where the limit has been exceeded for a time greater than the defined duration ( $T_v$ ) must be reported.	
Yes– Comments with suggestions for improving definitions	
Peter Burke ATC #1	Yes  This answer is "yes" but with the qualification that committing to "yes" depends on the eventual definition of an OSL, which is not available yet and is only now being developed by a different SAR drafting team.
The Determine Facility Ratings, System Operating Limits and Transfer Capabilities SAR did not include a definition of the subset of system operating limits being addressed in this standard. The revised standard does include use of the new term, "Interconnection Reliability Operating Limits." The definition for this new term will be posted for public comment with the draft standard.	

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<p>Ray Morella FirstEnergy #1</p> <p>Joanne Borrell FirstEnergy Sol #3</p> <p>Ed Stein Firstenergy Sol #6</p>	<p>Yes</p> <p>It would be of value to state that a reportable violation does not exist until the Operating Security Limit has been consecutively violated for tdefined. It would also be of value to state that the exceeding of the operating limit for any period of time must be documented. If in the graph the monitored value dipped below the Operating Security Limit for an instance and then exceeded the limit for the rest of the period and that was still an Operating Security Limit Violation, another loophole will have been addressed. Documenting near misses is also a good idea</p>
<p>The graphs have been refined based on the numerous suggestions from commenters.</p> <p>The clock that measures the duration an IROL has been met or exceeded starts <b>each</b> time the monitored value is equal to its IROL and ends each time that value returns to a magnitude that is below the IROL. So, if the monitored value dipped below the IROL for an instant, (one EMS scan cycle), the clock would stop measuring the duration of the first event when the monitored value returned to a measure lower than the IROL. If the monitored value rose to the IROL again, the clock would re-start at t0 the moment the monitored value was equal to or greater than the IROL.</p>	
<p>William Smith Allegheny Pwr #1</p>	<p>Yes</p> <p>This is an excellent graph, but I am unsure the intent of including it in these comments? The graph depicts an OSL violation involving time and is too simplistic. OSLs could also be violated by exceeding the continuous ratings, or by exceeding emergency ratings for post-contingency flows monitored by state estimators. An OSL violation could also involve exceeding post-contingency voltage limits or stability limits where cascading could result. If OSL violations are going to be defined in this document, then all potential violation should be addressed.</p>
<p>The graphs have been revised to provide more examples, and to improve the labeling. The term, IROL has been adopted for use in this standard, and it is defined and explained through the new set of charts. This standard focuses just on the subset of all system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>Yes</p> <p>Some clarification is needed. The System Operating Limit itself can be defined with a magnitude and a time limit, so the magnitude limit can be a step function. E.g., the allowable loading magnitude “X” for a 1-hour limit would be higher than the allowable loading “Y” for a 4-hour limit, so there should be a violation only if the yellow portion is above “X” for more than 1 hour, or above “Y” for more than 4 hours.</p>
<p>The subset of system operating limits being addressed in this standard are those limits that, if exceeded, could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>When the RA or PA identifies which of its system operating limits will be IROLs, the RA or PA must also identity a duration component for each IROL. The duration component may be different for each limit. The IROLs have to be established following the Determine Facility Ratings standard and they can’t violate the owner’s facility ratings.</p>	
<p><b>Yes – Comments about graph details</b></p>	
<p>Toni Timberman BPA #1</p>	<p>Yes</p> <p>A diagram such as this should be part of the Standard, but the green solid line and the blue dashed line should be deleted as they have no relevance and are confusing.</p>
<p>The chart has been revised.</p>	

**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

Francis Halpin BPA Bus Line #5,6	Yes But, the lines and arrows look like they need some more accurate placement.
The chart has been revised.	
Raj Rana AEP #1,3,5,6	Yes See comments about the graph in the white comment boxes above on the graph. The graph is hard to understand and interpret. <ul style="list-style-type: none"> <li>- When is to reset? If the actual data drops below the limit for 30 sec., is the time reset to 0 for determining the violation? What if for 3 minutes or 3 seconds?</li> <li>- What is the significance of the dotted blue line? Is this to indicate that if you exceed this level regardless of duration you have a violation?</li> <li>- This section above the yellow shaded area should not be red unless the Facility Ratings Standard defines a SOL violation as having a magnitude component, i.e. if you exceed 110% of a limit even instantaneously, then you have a SOL violation.</li> </ul>
<p>The clock that measures the duration an IROL has been met or exceeded starts <b>each</b> time the monitored value is equal to its IROL and ends each time that value returns to a magnitude that is below the IROL. So, if the monitored value dipped below the IROL for an instant, the clock would stop measuring the duration of the first event when the monitored value returned to a measure lower than the IROL. If the monitored value rose to the IROL again, the clock would re-start at t0 the moment the monitored value was equal to or greater than the IROL.</p> <p>The chart has been revised, and the blue line is not included in the revised chart.</p> <p>The revised chart does not include a 'red' section above the 'yellow' section.</p>	
ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2	Yes First this graph is a great aid in understanding this standard. I really like it. The following suggestions are for making a good thing better. I voted yes because of my interpretation of the graph. I'm not sure my interpretation is completely correct. I recommend that the graph (and the description of the graph) also be done in various shades of grey because not everybody has a color printer and many operators would get a black and white copy of the graph. The pointers for Dactual, tgood, and limit should be closer to the curve or line that they represent. I don't know why there is a dotted blue line representing the max value of the monitored value; it doesn't seem to be used anywhere. I think it would be of value to state that a reportable violation does not exist until the Operating Security Limit has been consecutively violated for tdefined. I think it would be of value to state that the exceeding of the operating limit for any period of time must be documented. Under existing NERC Policy I assume that there would not be a reportable Operating Security Limit Violation if the Operating Security Limit were exceeded for 28 minutes, then it was not exceeded for 1 minute, then it was exceeded for another 28 minutes, then it was not exceeded for 1 minute and this pattern continued for the next 24 hours. I'm teasing a little here because you can't cover every circumstance in detail. In fact I do think that the above example would be a reportable Operating Security Limit Violation. If in the graph the monitored value dipped below the Operating Security Limit for an instance and then exceeded the limit for the rest of the period and that was still an Operating Security Limit Violation, another loophole will have been addressed.

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<p>The chart has been updated. We will produce the final version in shades of gray so that it is easy to understand when printed.</p> <p>The revised standard clearly states that all instances of exceeding an IROL must be documented, but only those instances of exceeding an IROL for a time greater than or equal to the IROL's <math>T_v</math> must be reported.</p> <p>The clock that measures the duration an IROL has been met or exceeded starts <b>each</b> time the monitored value is equal to its IROL and ends each time that value returns to a magnitude that is below the IROL. The value must remain below the IROL for at least 30 seconds – otherwise the clock continues ticking. So, if the monitored value dipped below the IROL for 30 seconds, the clock would stop measuring the duration of the first event when the monitored value returned to a measure lower than the IROL. If the monitored value rose to the IROL again, the clock would re-start at <math>t_0</math> the moment the monitored value was equal to or greater than the IROL.</p>	
<p><b>Yes – Misc comments</b></p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes The results from the OLDTF may create the need to review this.</p>
<p>The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.</p> <p>This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.</p> <ul style="list-style-type: none"> <li>– The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique <math>T_v</math>.</li> </ul> <p>The data required by the OLDTF is more extensive than the data required by this standard.</p> <p>As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes Based on the above graph the terminology used is correct. However Manitoba Hydro believes that the concept of operation related to operating limits and reportable violations should be defined by the Standard Drafting Team for Standard “Determine Facility Ratings, System Operating Limits, and Transfer Capabilities”. The concepts that they develop should then be integrated in this Standard</p>
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities SAR did not include a definition of the subset of system operating limits being addressed in this standard. The revised standard does include use of the new term, “Interconnection Reliability Operating Limits.” The definition for this new term will be posted for public comment with the draft standard. This standard does support the definition of system operating limits established with the Determine Facility Ratings SAR.</p>	
<p>Fred Frederick Vectren #3</p>	<p>Yes/No</p>
<p>Ed Riley CA ISO #2</p>	<p>Yes The CAISO agrees with this requirement as long as the term “Documentable” refers to the entities’ internal process of documentation.</p>
<p>In the revised standard, ‘documentable’ has been clarified to indicate that this may be an operations log or other documentation indicating the magnitude and duration for each instance of exceeding an interconnection reliability operating limit (This data may be from an operating log, may be from the entity’s energy management system or may be from some other source.)</p>	

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<p>Charles Yeung Reliant Energy #6</p>	<p>Yes The yellow zone is clearly a region where the operations exceed a stated “safe” limit. To maintain the integrity of that limit, such excursions must be recognized. These should be reported to NERC and recorded though not defined as a “reportable violation”.</p>
<p>To reduce the burden of reporting, the standard limits the reporting requirements to those that exceed both the magnitude and duration components of the interconnection reliability operating limit. For compliance purposes, each RA must document each instance of exceeding an IROL, and must have this documentation available upon the request of its Compliance Monitor.</p>	
<p>Albert M. DiCaprio MAAC #2</p>	<p>Yes The idea of ‘documenting’ near-misses and not treating them as non-compliance is a good one. It will ensure that the industry can access such information if needed (for example if there is a question of too many near misses).</p>
<p>To reduce the burden of reporting, the standard limits the reporting requirements to those that exceed both the magnitude and duration components of the interconnection reliability operating limit. For compliance purposes, each RA must document each instance of exceeding an IROL, and must have this documentation available upon the request of its Compliance Monitor. If the industry were to conduct a study on near-misses, the Compliance Monitor would have the right to request this data.</p>	
<p>Stuart Goza TVA #1 Tony Jankowsk We-Energies #4 Roman Carter So Co Gen 3,5,6 (6 members) Kathleen Goodman ISO NE #2 Joe Minkstein PG&amp;E #5 Kim Warren IMO #2 Richard Kafka Pepco #1 Mike Miller Southern Co #1 Lloyd Linke MAPP #2 Dilip Mahendra SMUD #1 Darrel Richardson Illinois Power #1, 3 Richard Schwarz PNSC #2 James Stanton Calpine #5 Alan Johnson Mirant #6 Alan Boesch NPPD #1</p>	<p>Yes</p>

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6 Based on the above graph, do you agree with the concept that operating within the “red zone” is a reportable violation?

Summary Consideration:

Definition of an Interconnection Reliability Operating Limit – a system operating limit that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Under the proposed standard, each case of exceeding an IROL must be logged as an ‘event’; each case of exceeding an IROL for a time greater than or equal to  $T_v$  must be reported to the Compliance Monitor. Instantaneous instances of exceeding a limit by a large amount must be documented but are not reportable events in the revised standard.

**No – Comments indicating we should wait for OLD TF**

Vern Colbert  
 Dominion #1  
 Thomas Pruitt Duke #1  
 Susan Morris SERC #2  
 Robert Reed TS (See List)

No  
 Wait until the OLDTF work is complete.

The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.

This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.

- The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique  $T_v$ . The data required by the OLDTF is more extensive than the data required by this standard.

As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.

Guy Zito (See List)  
 NPCC #2 – 2  
 NPCC #1 – 5  
 David Kiguel  
 Hydro One #1

No  
 This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.

The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.

This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.

- The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique  $T_v$ . The data required by the OLDTF is more extensive than the data required by this standard.

As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.



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<p>Gregory Campoli NY ISO #2</p>	<p>No Responses to this portion of the standard should be delayed until a response is provided by the NERC Operating Limit Definition TF.</p>
<p>The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.</p> <p>This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.</p> <ul style="list-style-type: none"> <li>– The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique <math>T_v</math>.</li> </ul> <p>The data required by the OLDTF is more extensive than the data required by this standard.</p> <p>As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.</p>	
<p><b>No – Comments about concepts</b></p>	
<p>William Smith Allegheny Pwr #1</p>	<p>No This graph shows the possibility of an OSL violation occurring for a momentary excursion above a limit without exceeding a limit for a period of time (tdefined). I was not aware that this constituted a violation.</p>
<p>The graph has been revised to omit the bump that crossed into the 'red' zone. The definition of an IROL does not include moving outside the yellow zone into the red zone by exceeding a limit by a certain magnitude. In the revised standard, all instances of exceeding an IROL must be documented, but only those instances where an IROL has been exceeded for a duration that is greater than or equal to the IROL'S defined (<math>T_v</math>) time frame must be reported.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No Operating in such a manner that instability, uncontrolled separation, or cascading outages will not occur to more than a localized area is a non-reportable OSLV</p>
<p>This conforms with the proposed standard. The proposed standard only addresses the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No We agree that operating above the limit and to the right of T-defined is a reportable violation. We do not agree with the concept of having the Facility Ratings Standard adopt a magnitude componet to the definition of a SOL violation. We do not believe a momentary or short term deviation above the dotted blue line should be defined as a reportable event. Further, what should be defined as the "limit?" The goal is to prevent operating above a reliability limit, that if exceeded could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. So is the "limit" that value as determined by either the Planning Authority or the RA via their analysis or is it the value that the TOP provides and indicates that he is willing to load his equipment to, recognizing that some TOP's may specify a value that is less then true reliability limit?</p>

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<p>The Facility Ratings SDT did not adopt a mandatory time component for system operating limits, nor did they adopt a definition for the subset of system operating limits addressed in this standard.</p> <p>In the revised standard, the RA is required to identify the subset of its system operating limits that are IROLs, and each of these limits must have a time component.</p> <p>In the revised standard, operating above the blue dotted line is not a reportable event.</p> <p>Under the Functional Model, the RA is assigned the responsibility of developing system operating reliability limits, and the TOP is assigned the responsibility for developing operating limits for local network integrity.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No</p> <p>The red area above the yellow background area is not a violation, violation only exist after predetermined time frame above limit is exceeded, tdefined.</p>
<p>The standard has been revised to reflect this.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>I thought that there wasn't an Operating Security Limit Violation until an Operating Security Limit was exceeded for a period of time (tdefined). I wasn't aware of an Operating Security Limit Violation that occurred for an instantaneous exceeding of a limit. Maybe I don't fully understand the Standard. Need to better describe what is a violation versus what is a reportable violation. The concept of a violation in the red zone is confusing.</p>
<p>The charts have been revised as has the standard. Many commenters indicated that exceeding a system operating limit for an instantaneous event should not be a reportable event, and this is what was adopted in the revised standard.</p>	
<p>Mike Miller Southern Co #1</p>	<p>No</p> <p>Operating outside thermal, voltage, or stability criteria that is defined by OSL, but operating such that instability, uncontrolled separation, or cascading outages will not occur to more than localized area as a result of most severe contingency is a non-reportable OSLV.</p>
<p>The standard has been revised to provide a more clear definition of an IROL. IROLs are the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Under the proposed standard, each case of exceeding an IROL must be logged as an 'event'; each case of exceeding an IROL for a time greater than or equal to <math>T_v</math> must be reported to the Compliance Monitor. Instantaneous instances of exceeding a limit by a large amount must be documented but are not reportable events in the revised standard.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Cannot agree to this without some indication of the value of "t" in the graph. If "t" is one minute then the graph does not represent a reasonable reportable violation. If "t" is thirty minutes, then the graph may represent a reasonable standard for reporting.</p>
<p>Each RA must establish a <math>T_v</math> for each IROL.</p>	
<p><b>No – Comments about graph details</b></p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No</p> <p>There is not enough information to understand the chart nor to answer this question. What kind of a limit is this? Does violating this limit cause cascading, uncontrolled separation of a significant portion of the Interconnect? If so, then we agree that this is a reportable violation. If this limit is a post-contingent thermal limit that won't cascade far, if at all, then this would not be a reportable violation.</p>

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<p>The charts and associated legends and definitions have all been updated in the revised standard. This standard only addresses the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system</p>	
<p>Ken Skroback AL Elec Coop #4</p>	<p>The above graph is unlabeled and I can't tell anything about it</p>
<p>The charts and associated legends and definitions have all been updated in the revised standard. This standard only addresses the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system</p>	
<p><b>No – Comments already addressed in earlier questions</b></p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>No Same as comment #5 <i>{ The above graph is not clearly defined, cannot determine what kind of limit(s) are being demonstrated (thermal, stability). More clarification needed before the question can be answered. Not sure why this is asked in this standard when one of the Explanations of Terms explains that the definitions of system operation limits and operating limit violations is being developed by the Facility Ratings SAR. Shouldn't the definition of a violation eliminate the need to ask this question?}</i></p>
<p>The charts and associated legends and definitions have all been updated in the revised standard. This standard only addresses the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system</p>	
<p>OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No See comment to Q5 above. <i>{ Please refer to the Operating Limits Definition Task Force report, "NERC Operating Limit Definitions and Reporting." The Task Force considers this report to be an integral part of its comments to Standard Drafting Team. The OLDTF has defined "Limit Compliance Violation" for reporting IRL violations to the Regional Council and NERC.}</i></p>
<p>The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.</p> <p>This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.</p> <ul style="list-style-type: none"> <li>– The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique T<sub>v</sub>.</li> </ul> <p>The data required by the OLDTF is more extensive than the data required by this standard.</p> <p>As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>See comment in question 5. <i>{ There are too many "irons in the fire" just now. The NERC OC has a task force working on this particular issue, and as indicated in the March OC meeting highlights, have directed the Reliability Coordinators to "field test"</i></p>

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<i>the OLDTF's definition and reporting form.}</i>	
<p>The SDT is happy to utilize the work of the OLDTF to the extent that its work is available in conjunction with the development of this Standard. The SDT will not wait for the OLDTF or any other group to complete its work.</p> <p>This proposed standard is being developed in an open process. All SDT meetings are open, and the OLDTF has sent a representative to meet with the SDT to share the work of the OLDTF. The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.</p> <ul style="list-style-type: none"> <li>– The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique T<sub>v</sub>.</li> </ul> <p>The data required by the OLDTF is more extensive than the data required by this standard.</p> <p>As part of this open process the SDT will continue with its standard drafting effort and will consider all the comments submitted with each public posting. The NERC standards development process provides ample opportunity for groups such as the OLD task force to contribute to this process.</p>	
<b>Yes – Comments with suggestions for improving graph</b>	
Toni Timberman BPA #1	<p>Yes</p> <p>If you mean the red slashed zone, then yes. The solid red should be removed as it is irrelevant and confusing.</p>
<p>The charts and associated legends and definitions have all been updated in the revised standard. This standard only addresses the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system</p>	
Francis Halpin BPA Bus Line #5,6	<p>Yes</p> <p>But, the lines and arrows look like they need some more accurate placement</p>
<p>The charts and associated legends and definitions have all been updated in the revised standard. This standard only addresses the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. We've tried to anchor the elements of the charts so they stay where they belong in the latest draft of the standard.</p>	
Joanne Borrell FirstEnergy Sol #3 Ray Morella FirstEnergy #1 Ed Stein Firstenergy Sol #6	<p>Yes</p> <p>The graph is confusing and additional wording should be added to clarify.</p>
<p>The charts and associated legends and definitions have all been updated in the revised standard. This standard only addresses the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system</p>	
<b>Yes – Comments already addressed in earlier questions</b>	
Sam Jones ERCOT #2	<p>Yes/No</p> <p>See our comments on #5 above.</p> <p><i>{ It is unclear which context applies to "reportable violation". If the violation being reported to NERC is the context, then this may be true only if the limit being monitored is an IRL (old OSL). It is true that the graph depicts an operating limit being exceeded. Whether it is reportable depends upon the context of whether it may be internally reportable on a Region basis, or whether it is intended to refer to reportable to NERC.}</i></p>

## Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

<p>The standard has been revised to provide a more clear definition of an IROL. IROLs are the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Under the proposed standard, each case of exceeding an IROL must be logged as an 'event'; each case of exceeding an IROL for a time greater than or equal to <math>T_v</math> must be reported to the Compliance Monitor. Instantaneous instances of exceeding a limit by a large amount must be documented but are not reportable events in the revised standard.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>Yes See comment in response to Question #5.</p> <p><i>{ Some clarification is needed. The System Operating Limit itself can be defined with a magnitude and a time limit, so the magnitude limit can be a step function. E.g., the allowable loading magnitude "X" for a 1-hour limit would be higher than the allowable loading "Y" for a 4-hour limit, so there should be a violation only if the yellow portion is above "X" for more than 1 hour, or above "Y" for more than 4 hours.}</i></p> <p>Also, it is not clear what is the basis of the "red zone" above the "yellow" zone in the time period to –defined</p>
<p>The charts and associated legends and definitions have all been updated in the revised standard. This standard only addresses the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>When the RA identifies which of its system operating limits will be IROLs, the RA must also identify a duration component for each IROL. The duration component may be different for each limit. Here's how this would apply to the example in this comment.</p> <p>First, the RA would need to look at limit X with its 1-hour limit and determine if exceeding this limit could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. Assume the RA did find that X is an IROL. The RA would then determine how long X could be exceeded (beyond its already identified 1 hr) before it risked instability, uncontrolled separation, or cascading outages. The duration that represents the RA's 'acceptable risk' is the <math>T_v</math> assigned to the IROL. For this example, let's assume <math>T_v</math> is 10 minutes.</p> <p>Taking the example a bit further, the RA would document when it exceeded X for 1 hr, but would not need to report the event unless X's 1-hr limit were exceeded for a time period equal to or greater than <math>T_v</math> or 10 minutes.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes see comment for #5.</p> <p><i>{Based on the above graph the terminology used is correct. However Manitoba Hydro believes that the concept of operation related to operating limits and reportable violations should be defined by the Standard Drafting Team for Standard "Determine Facility Ratings, System Operating Limits, and Transfer Capabilities". The concepts that they develop should then be integrated in this Standard}</i></p>
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities SAR did not include a definition of the subset of system operating limits being addressed in this standard. The revised standard does include use of the new term, "Interconnection Reliability Operating Limits." The definition for this new term will be posted for public comment with the draft standard. This standard does support the definition of system operating limits established with the Determine Facility Ratings SAR.</p>	
<p><b>Yes – Comments with suggestions for improving definitions</b></p>	
<p>Stuart Goza TVA #1</p>	<p>Yes Assuming that the term "limit" is appropriately defined.</p>
<p>The revised standard includes a clear definition of the subset of system operating limits called interconnection reliability operating limits, that are applicable to this standard.</p>	

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Lloyd Linke MAPP #2	Yes It should further be clarified that operation in such a zone is a violation regardless of whether or not instability/cascading outages happened or could have happened – if the limit was exceeded for the specified time, it is a reportable violation under any prevailing system conditions.
<a href="#">This conforms with the concepts presented in the latest version of the standard.</a>	
Dilip Mahendra SMUD #1	Yes Provided it is for a facility that is covered by the purpose of this standard. That is, if it is violating an operating limit established to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.
<a href="#">This conforms with the concepts presented in the latest version of the standard.</a>	
Charles Yeung Reliant #6	The Red region represents a condition where the system has operated beyond some specified time period in which the industry has agreed it will try to alleviate the excursion. The “reportable violation” is defined in conjunction with both the MW amount and the “t defined”. The “t defined” should be a value that is proposed and commented on in the development of the Operate Within Limits Standard.
<a href="#">Under the proposed standard, each RA is required to establish a T<sub>v</sub> for each of the system operating limits that RA identifies as interconnection reliability operating limits. T<sub>v</sub> is not expected to be the same number for every limit.</a>	
Ed Riley CA ISO #2 Fred Frederick Vectren #3 James Stanton Calpine #5 Kim Warren IMO #2 Tony Jankowski We-Energies #4 Joe Minkstein PG&E #5 Kathleen Goodman ISO NE #2 Darrel Richardson Illinois Power #1, 3 Alan Johnson Mirant #6 Alan Boesch NPPD #1 Albert M. DiCaprio MAAC #2 Richard Schwarz PNSC #2 Richard Kafka Pepco #1 Roman Carter So Co Gen 3,5,6 (6 members)	Yes

## **Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

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7. If you feel there are additional terms used in this draft standard that should be formally defined, please list those terms here. If possible, please provide us with a definition for each of these terms.

### **Summary Consideration:**

Many of the terms suggested are terms that have not been used in the revised standard. The terms used in the revised standard have been defined and the definitions will be posted for public comment when the revised standard is posted.

The draft definitions that were requested for terms used in the revised standard are:

### **Bulk Electric System**

A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk transmission system

### **Cascading Outages**

The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

### **Documentable Interconnection Reliability Operating Limit Violation**

An instance of exceeding an interconnection reliability operating limit for any length of time.

### **Generator Owner**

The entity that owns the generator.

### **Instability**

The inability of the transmission system to maintain a state of equilibrium during normal and abnormal system conditions or disturbances

### **Interconnection Reliability Operating Limit**

A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to  $T_v$ . Note that  $T_v$  may be zero.

### **Interconnection Reliability Operating Limit Violation**

Any instance of exceeding an interconnection reliability operating limit for any length of time.

### **Monitor**

To scan various data sources and draw conclusions about what the data indicates.

### **Occurrence period (Performance-reset Period)**

The time period in which performance is measured, evaluated, then reset.

### **Operational Planning Analysis**

An analysis of the expected system conditions, given the peak load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions.

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### Real-time

Immediate time as opposed to future time.

### Real-time Assessment

An evaluation conducted by collecting and reviewing immediately available data to determine the status of the electric system. The reliability authority uses real-time data to conduct its real-time assessment.

### Real-time Data

Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values – may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol and or SCADA Data), and manually collected data

### Reliability Authority Area

A defined electrical system bounded by interconnection (tie-line) metering and telemetry under the control of a single Reliability Authority.

### Reportable Interconnection Reliability Operating Limit Violation

An instance of exceeding an interconnection reliability operating limit for time greater than or equal to the interconnection reliability operating limit's  $T_v$ .

### Self-certification

A process whereby an entity submits a form to its compliance monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard.

Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed on an annual basis although they may be required more often

### Transmission Operator

The entity that provides transmission services to qualified market participants under applicable transmission service agreements.

### Uncontrolled Separation

The unplanned break-up of an interconnection, or portion of an interconnection, that is not the result of automatic action by a Special Protection System or Remedial Action Scheme operating correctly.

OLDTF (9?) 6 - #2 1 - #1,5	Instability Uncontrolled Separation Cascading Outages Widespread Area Local Area The OLDTF has defined these terms in its attached report. The OC has directed the Reliability Coordinators to use these definitions as a "field test" this summer, and to work with the Standard Drafting Team to incorporate these definitions into the Reliability Standard.
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**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

<p>The OLDTF report provided to the SDT did not contain a definition of instability, uncontrolled separation, or cascading outages. The terms, widespread area, and local area are not used in the revised standard. The following terms have been defined and will be posted with the revised standard: instability, uncontrolled separation and cascading outages.</p>	
<p>Toni Timberman BPA #1</p>	<p>REAL Surrogate (requirement 2) DATA “Problems” (requirement 10)</p>
<p>The terms, ‘real’ and ‘data’ are not used in isolation in the revised standard. Definitions have been provided for ‘real-time’, ‘real-time assessment’ and ‘real-time data’. The terms surrogate and problems are not used in the revised standard.</p>	
<p>Todd Lucas (6?) Mike Miller Southern Co #1</p>	<p>Non-reportable Operating Security Limit Violation Reportable Operating Security Limit Violation Non-Reportable OSLV: Operating outside the thermal, voltage, or stability criteria that defines the Operating Security Limit, but operating such that instability, uncontrolled separation, or cascading outages will not occur to more than a localized area as a result of the most severe single contingency. Reportable OSLV : Operating outside the thermal, voltage, or stability criteria that defines the Operating Security Limit, such that instability, uncontrolled separation, or cascading outages could occur to a widespread area as a result of the most severe single contingency.</p>
<p>The terms non-reportable Operating Security Limit Violation and Reportable Operating Security Limit Violation are not used in the revised standard.</p>	
<p>Susan Morris SERC #2  Robert Reed TS (See List)</p>	<p>Real Time Self-Certification Instability Cascading Outages Uncontrolled Separation Actual telemetered data, or real-time data? Real-Time Monitoring Frequency of Real-Time Monitoring System Operator Limits System operator limits as defined is appropriate for RAs, but should not be defined as provided for TOPs. For TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived, this standard does not result in any entity assuring that bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.</p>
<p>Real-time, self-certification, instability, cascading outages, uncontrolled separation, real-time data, and monitoring are used in the revised standard and have been defined. The revised standard does not use the following terms: System operator limits, actual telemetered data or frequency of real-time monitoring. The revised standard uses the term, ‘interconnection reliability operating limits’ to define the subset of system operating limits that, if exceeded, could lead to instability, cascading outages or uncontrolled separation that adversely impact the transmission system.</p>	

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<p>Thomas Pruitt Duke #1</p>	<p>Real Time Self-Certification Instability Cascading Outages Uncontrolled Separation Actual telemetered data, or real-time data? Real-Time Monitoring Frequency of Real-Time Monitoring System Operator Limits Equipment Ratings For TOPs, system operating limits should not only include those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation, but also local operating limits. This is a major issue in terms of the scope. As conceived, this standard does not result in any entity assuring that the bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.</p>
<p>Real-time, self-certification, instability, cascading outages, uncontrolled separation, real-time data, and monitoring are used in the revised standard and have been defined. The revised standard does not use the following terms: System operator limits, actual telemetered data, frequency of real-time monitoring, equipment ratings.</p> <p>The revised standard uses the term, 'interconnection reliability operating limits' to define the subset of system operating limits that, if exceeded, could lead to instability, cascading outages or uncontrolled separation that adversely impact the transmission system.</p>	
<p>Stuart Goza TVA #1</p>	<p>NERC OC has a special task force, the Operating Limit Definition Task Force that is specially addressing definitions for System Operating Limit and Interconnected Reliability Limit. The results of this task force, if approved by NERC OC should be reflected in the terminology used in this standard.</p> <ol style="list-style-type: none"> <li>(1) Define uncontrolled separation</li> <li>2. Define uncontrolled cascading</li> <li>3. Define controlled separation</li> <li>4. Define controlled cascading</li> <li>5. Define instability</li> <li>6. Define System Operating Limit</li> <li>7. Define System Operating Limit Violation</li> <li>8. Define Interconnected Reliability Limit</li> <li>9. Define Interconnected Reliability Limit Violation</li> <li>10. Facility Rating Methodology and Triggering Criteria for above conditions</li> <li>11. RA, BA, IA roles need to be clarified</li> </ol>

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<p>The following terms are not used in this standard and have not been defined: Uncontrolled cascading, controlled separation, controlled cascading, system operating limit, system operating limit violation, interconnected reliability limit, interconnected reliability limit violation. The facility rating methodology is being addressed by the standard, Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Clarification of the RA, BA and IA roles may be found in the Functional Model.</p> <p>The following terms are used in the revised standard and a definition has been provided with the revised standard: Uncontrolled separation, cascading outages, instability.</p>	
<p>Sam Jones ERCOT #2</p>	<p>Instability Uncontrolled Separation Cascading Outages Widespread Area Local Area</p> <p>ERCOT has been participating in the NERC Operating Limit Definition Task Force. Please refer to the Task Force Report. The NERC OC has endorsed the recommendations of the Task Force and has directed the Reliability Coordinators to use these definitions as a “field test” this summer, and to work with the Standard Drafting Team to incorporate these definitions into the Reliability Standard.</p>
<p>The OLDTF report provided to the SDT did not contain a definition of instability, uncontrolled separation or cascading outages. The terms, widespread area and local area are not used in this standard.</p> <p>The following terms have been defined and will be posted with the revised standard: instability, uncontrolled separation and cascading outages.</p>	
<p>Ray Morella Ed Stein Joanne Borrell FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8, #5 – 1, #2 – 2</p>	<p>(2) Occurrence Period, (2) Operating Security Limit Violation (3) Occurrence Period – Not sure what you mean when you refer to an Occurrence Period, need better definition (2) Operating Security Limit Violation – A limit that results in instability, uncontrolled separation, or cascading outages if exceeded for more than one hour. We believe this definition is appropriate for the existings NERC template on Operating Security Limit Violation.</p>
<p>The following terms are not used in the standard: Operating Security Limit Violation</p> <p>The following term is used in the Compliance Sanctions Table and has been defined: Occurrence period.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>Identified problem Identified problem: Does the term “identified problem” as used in this standard refer to a problem identified through reliability analysis, either for actual conditions or on a first contingency basis, that if it were to occur could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system or does it also include thermal overloads and voltage conditions that do not lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system?</p>
<p>The term, ‘identified problem’ was not used in the revised standard.</p>	
<p>Peter Burke ATC #1</p>	<p>“Technically accurate” “Single contingency.” This standard needs to precisely define “single contingency.” This standard, built on the premise of monitoring and assessing short term reliability, nowhere mentions the documentation or reporting of contingencies. Within the Sanctions Table, how, precisely, does the enforcement entity interpret</p>

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	<p>the phrase “greater of 4<sup>th</sup> consecutive period of violations?”</p> <p>What are the “MW” that the fines per MW are based on? Is this the amount of MW affected or the estimated MW affected in the event of the next contingency? Can a fine be levied for the risk posed by a next contingency that threatens a large region even if the event of concern never occurs?</p> <p>The section “Fixed Dollars,” near the end of the standard, describes in very vague language how monetary sanctions may be adjusted. Left unsaid is who makes the adjustments, upon whose approval, and under what circumstances. The whole standard is put at risk of losing its meaning if this section is left in its current form.</p> <p>It would be of value to include brief descriptions of the different functional areas, along with indication as to who does what, in the standard with a reference to the official definitions that are documented elsewhere. Such a reference would be helpful for someone not intimately involved with the standard or, particularly, the NERC Functional Model.</p> <p>The use of the words “steam generator” in footnote 1 of Version B seems inconsistent with the industry accepted meaning of those words.</p> <p>“Technically accurate” to the extent that the data supplied is consistent with the supplier’s documented methodologies and criteria.</p>
<p>The following terms are not used in the revised standard: <a href="#">technically accurate</a>, <a href="#">single contingency</a>.  The questions about the compliance program are outside the scope of the SDT. They will be forwarded to the Director-Compliance.  Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated as needed as part of the Compliance Program.  The footnote referenced has been dropped from the revised standard.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Surrogate Value needs to be defined.  Supporting Documentation needs to be defined  System operator limits as defined herein is appropriate for RAs, but should not be defined as provided herein for TOPs. For TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived herein, this standard does not result in any entity assuring that the bulk power system is operating within limits, it only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.</p>
<p>The following terms are not used in the revised standard: <a href="#">surrogate data</a>, <a href="#">supporting documentation</a> <a href="#">system operator limits</a></p>	
<p>Kim Warren IMO #2</p>	<p>Local Areas  Reliability Authority Area  Wide Area  Clearly differentiate between electrical areas that can cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and those areas that don’t (Local Areas).  Reliability Authority Area consists of one or more Control Areas for which a single Reliability Authority is responsible.  A Wide Area impact is one that goes beyond the Reliability Authority Area.</p>

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<p>The following terms are not used in the revised standard: local areas, wide area.</p> <p>Th term, Reliability Authority Area is from the Functional Model and a draft definition has been developed and will be posted with the revised standard.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Generator Owner “real” data real-time</p>
<p>The term ‘real’ data isn’t used in the revised standard.</p> <p>The term, “generator owner” is from the revisions currently being made to the Functional Model. The draft definition will be posted with the revised standard.</p> <p>The term real-time has been defined and will be posted with the revised standard.</p>	
<p>Joseph Buch Madison #4</p>	<p>See comments on question 3.</p> <p><i>{ My understanding of the process is that for a RA or TOP to be certified they would need to demonstrate among other things that they already have the required “base” data. Thus this standard only covers changes/new additions. However, the standard does not define what is existing. Included in the standard should be a definition of existing facilities. It is recommended that the following or something similar be added to clearly define existing facilities. “Facilities that are already energized as of the day the standard is approved or the date the RA or TOP is certified are considered existing facilities.” }</i></p>
<p>The revised Certification SARs do not contain a requirement that addresses ‘base data’. This standard was revised to include the provision of all data needed by the RA to monitor and assess its system relative to IROs.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>“Planned for Contingencies”</p> <p>“Planned for Contingencies” as opposed to contingencies beyond criteria need to be included in this standard. It is common practice to only run operational reliability analysis by applying the “Planned for Contingencies” to the current system configuration. By not specifically addressing “Planned for Contingencies” the standard appears to require running multiple contingencies to find the unstable operating point.</p>
<p>The term, ‘planned for contingencies’ was not used in the revised standard.</p>	
<p>ECAR Ops Panel #1 – 8, #5 – 1, #2 – 2</p>	<p>(4) Transmission Operator</p>
<p>The term, ‘ Transmission Operator’ is from the Functional Model. The definition will be posted with the revised standard.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>Real Time Self-Certification Compliance Reset Period Instability Cascading Outages Uncontrolled Separation</p> <p>The Compliance reset period should be defined as 12 months without a violation from the time of the last violation.</p> <p>Either provide a definition with “actual telemetered data” or replace it with “real time data”, throughout this document.</p>

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<p>The following terms have been defined and will be posted with the revised standard: real-time, self-certification, performance-reset period, instability, cascading outages, uncontrolled separation.</p> <p>The term, 'compliance-reset period' was replaced with 'performance-reset period.' The performance reset period is not a constant – it is intended to vary with the type of performance being assessed.</p> <p>The term, 'actual telemetered data' was not used in the revised standard.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>Real-time Data Self-Certification Operational Analysis Planning Analysis Real Time Analysis</p>
<p>The following terms are not used in the revised standard: Operational analysis, planning analysis, real-time analysis.</p> <p>The following terms are used in the revised standard and the draft definitions will be posted with the revised standard: real-time data, self-certification, operational planning analysis, real-time assessment.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>Operational Planning Studies</p>
<p>The term, 'operational planning studies' was replaced with 'operational planning analyses' and a draft definition will be posted with the revised standard.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Self Certification The various types of "data" referred to in the standard. The standard should be very specific about what type of data is acceptable.</p>
<p>The term, self-certification was defined and the draft definition will be posted with the revised standard. The revised standard provides more clarity with respect to the type of data being addressed.</p>	
<p>Ed Riley CA ISO #2</p>	<p>Problem versus violation Problem = exceed limits but not for defined time, there for it is not a reportable event. Violation = exceed limit for defined time, there for it is a reportable event.</p>
<p>The term, 'problem' is not used in the revised standard.</p> <p>As used in this standard, a violation is any instance of exceeding an IROL for a time greater than or equal to the IROL's T<sub>v</sub>. The term, IROL Violation has been defined and the draft definition will be posted with the revised standard.</p>	
<p>Alan Boesch NPPD #1</p>	<p>Actual data Actual telemetered data</p>
<p>The terms, 'actual data' and 'actual telemetered data' are not used in the revised standard.</p>	

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**8. Who should provide the RA with generation data needed for system analyses? (This data consists of the generator operational characteristics.) (BA, TOP, Gen, PA)**

**Summary Consideration:**

The general consensus of those commenters responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.

Stuart Goza TVA #1 Fred Frederick Vectren #3	BA
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default function for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p>	
Tom Petrich (5) PG&E #1	TOP It would also be acceptable for the generator to provide identical data concurrently to the TOP and the RA. Our recommendation is to minimize any possibility of the TOP and the RA having conflicting data.
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p>	
Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5	BA, TOP, Gen, PA In ERCOT, the TOP does not receive all of the generator data; some is provided to the TOP in an Interconnection Agreement, but more is required to be provided to ERCOT in its role as the RA. The BA may well provide the data if the generators are under a contractual obligation to do so with the BA. The Generator Owner and the Transmission Owner provides data for their facilities.
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	
Joe Minkstein PG&E #5	TOP

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<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	
<p>Joanne Borrell FirstEnergy Sol #3</p>	<p>Gen</p> <p>The Generator is the best possible resource. However, as long as the data is accurately supplied, it doesn't matter who supplies it. I don't think the standard should be too prescriptive on who supplies the data.</p>
<p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Gen</p> <p>With regards to this and subsequent references to "Generator"; the Functional Model has recently been expanded (in draft at least) to include Generator Owners and Generator Operators. This standard should refer to those particular entities when making requirements for Generators.</p>
<p>Agreed. The revised standard uses the term, Generator Owner to conform with the expected changes to the Functional Model and to align with the proposed requirement in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard that assigns responsibility for establishing facility ratings with the owners of facilities.</p>	
<p>Ed Stein Ray Morella FirstEnergy #1, 6 ECAR Ops Panel #1 – 8, #5 – 1, #2 – 2</p>	<p>Gen</p> <p>The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the Reliability Coordinator (RC) should use data from the BA, the TOP, or the Planning Authority, if he can't get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the TOP. This should be allowed. As long as the data is accurately supplied, it doesn't matter who supplies it. I don't think the standard should be too prescriptive on who supplies the data.</p>
<p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	
<p>Joseph Buch Madison #4</p>	<p>Gen</p> <p>There should only be a single area responsible for maintaining data necessary for system analysis. The more often the same data is requested by multiple entities the more likely errors can occur. Also, the more often data is passed from entity to entity the more often errors can also occur. I would recommend that the RA be the central location for all data. All requests for data should go to the RA who would provide all responses.</p>
<p>This standard's scope is restricted to those elements that were defined during the development of the associated SAR. The requirements established within this standard must remain within the defined scope of the SAR. The scope of this standard is limited to the system analyses that identify possible or actual instances of exceeding interconnection reliability operating limits – and these analyses are performed by the RA, not the TOP. This is reflected in the revised standard.</p>	



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Gerald Rheault Manitoba #1,3,5,6	Gen Manitoba Hydro believes that the generator owner must provide this data since as owner of the asset he is responsible for protecting that asset and establishing ratings consistent with the risk level he is willing to assume.
Agreed. The revised standard uses the term, Generator Owner to conform with the expected changes to the Functional Model. This also aligns with the proposed requirement in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard that assigns responsibility for establishing facility ratings with the owners of facilities.	
Lloyd Linke MAPP #2	Gen A single source for this data is desired.
Agreed. The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.	
Doug Hils Cinergy #1	Gen Generator would be the best being they are the owners of the data. Standard however should allow for the data to be provided to a TOP and then relayed to the RA.
The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.	
Alan Boesch NPPD #1	Gen The Generator should be responsible for getting the data to the RA. How it is accomplished should not be an issue. I would guess that in most situations it will be supplied by Planning.
Agreed. The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, Planning Authority or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.	
Albert M. DiCaprio MAAC #2	Gen Generator Operator is the responsible party.
Under the proposed revisions to the Functional Model, this responsibility is assigned to the Generator Owner, rather than the Generator Operator.	
Richard Schwarz PNSC #2 Toni Timberman BPA #1	Gen Generator Owner or Operator should provide the unit characteristics and the real time data

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<p>Kim Warren IMO #2  Ken Skroback AL Elec Coop #4  William Smith Allegheny Pwr #1  Todd Lucas (6?) Southern Co #1  John Blazekovich Exelon #1,3,5,6  Ed Riley CA ISO #2  Dilip Mahendra SMUD #1  Alan Johnson Mirant #6  James Stanton Calpine #5  Richard Kafka Pepco #1  Kathleen Goodman ISO NE #2</p>	<p>Gen</p>
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p>	
<p>Roger Green  Southern Co #5</p>	<p>PA  Regardless of who receives and distributes the data, the generator owner should only have to provide the data to one group.</p>
<p>The issue of RA vs PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
<p>Vern Colbert Dominion #1  Mike Miller Southern Co #1</p>	<p>BA, Gen</p>
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model approach ( to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	
<p>Darrel Richardson  Illinois Power #1, 3</p>	<p>BA, Gen  Although we checked both the BA and the Generator as possible sources, we feel that the information provided to the RA should be supplied by the Generator with a carbon to the BA.</p>
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p> <p>This standard is restricted to the requirements identified in the scope of the associated SAR. The proposal that data be sent to the BA is outside the scope of what could be addressed within this standard.</p>	
<p>Roman Carter So Co Gen 3,5,6</p>	<p>BA, Gen, PA</p>

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(6 members)	
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p> <p>The Functional Model approach ( to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p> <p>The issue of RA vs PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
Gregory Campoli NY ISO #2	Gen, PA The RA should be able to cross check data used by the Planning Authority with current data provided by the Generator.
Tony Jankowski We-Energies #4 Lee Xanthakos SCE&G #1 Lee Westbrook Oncor #1	Gen, PA
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model approach ( to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p> <p>The issue of RA vs PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
FRCC 6-#1, 4-#2, 1-#2	BA, TOP, Gen
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p> <p>The Functional Model approach ( to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	
Susan Morris SERC #2 Robert Reed TS (See List)	TOP, Gen Are you referring to Generator Owner or Generator Operator or both above?

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<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	
<p>Thomas Pruitt Duke #1</p>	<p>TOP, Gen, PA</p> <p>The term generator needs to clearly specify that entity responsible for the generator resources. The real-time generator data should be provided by the generator to the TOP and RA; modeling data should be provided by the generator to the PA and RA.</p>
<p>Raj Rana AEP #1,3,5,6</p>	<p>TOP, Gen, PA</p> <p>The Generator is the best possible resource to provide the data. The Generator must have an interconnection agreement with a TOP, and said agreement should require the Generator to provide this information. Thus, the RA should be able to receive this type of information from the TOP. The PA should also have this information, which they may have received from the TOP or the Generator directly.</p>
<p>Guy Zito (See List) NPCC #2 – 2, NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>TOP, Gen, PA</p>
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p> <p>The issue of RA vs PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
<p>Peter Burke ATC #1</p>	<p>BA, TOP, Gen, PA</p> <p>Generator should supply the current machine capabilities, including derating of MW or MVAR output capability.</p> <p>Planning Authority should supply the full dynamics descriptions to be used in the off-line models.</p> <p>All play a part in providing the proper data and depends upon the NERC Functional Model in place. Experience at ATC has shown this can be difficult with regard to keeping everyone informed and determining who is non-compliant or responsible for declaring an entity in non-compliance. ATC, especially, has had trouble keeping current on ownership of IP generators and working with the Regional Council to obtain timely generator data.</p> <p>The Generator Operator/Owner should have this data and should be responsible for providing it to the RA. The Gen owner will be aware of changes to their equipment that others, including the Transmission Owner/Operator, would not be aware of. Also, from a liability standpoint, if you make someone else responsible for providing the data, what authority do they have to request it and who is liable for any costs incurred if the data is lost? In many cases, the TOP will also need</p>

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	<p>the Generation data to perform their duties. In that case, it may be acceptable for the TOP to provide the data to the RA assuming all liability issues have been addressed.</p>
<p>Karl Kohlrus CWL&amp;P #5</p>	<p>BA, TOP, Gen, PA</p>
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p> <p>The issue of RA vs PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>The question should be restated to conform to the parenthetical statement – Who should provide the RA with generator operational characteristic data needed for system analyses? The Generator Owner function (consistent with the Revised Functional Model) should provide the generator data necessary for system analysis and operational performance to any and all functions needing that data, including the RA. If needed, the RA may request the necessary generator data from the Transmission Owner to whom the Generator Owner should be obligated to provide the data as part of its interconnection and operating agreement with the Transmission Owner.</p>
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>The generator operational characteristics are needed for many purposes and this information may be needed by others besides the RA. NERC should require a single coordination point for the submittal of this information. One must not be required to submit this same information repeatedly to different entities or “authorities”. E.g. – if there is already a requirement for generator operational characteristics to be supplied to the Planning Authority, then the PA may be authorized to provide it to the RA. Data confidentiality agreements may apply.</p>
<p>The general consensus of those people responding to this question is that the Generator Owner should have the responsibility to ensure that the generator data needed for reliability is provided to the Reliability Authority.</p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world T-Oper, Control Area, or Reliability Coordinator may serve to transmit that data from the generator to the RA – but the Generator Owner would still be held responsible that that function get carried out.</p>	

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### 9. Who should provide the TOP with generation data needed for system analyses? (This data consists of the generator operational characteristics.) (RA, BA, Gen, PA)

#### Summary Consideration:

Although there is no clear consensus on which functional entity should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analyses. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.

Albert M. DiCaprio MAAC #2	RA In the framework of the Functional Model, the TOP in its role as TOP does not have the responsibility for doing system analysis. To the extent that the TOP does local analysis that information must come from the RA (unless the TOP has its own agreements to access that data.)
Alan Johnson Mirant #6	RA Under certain circumstances (for example during the interconnection process) it is probably more efficient for the generator to provide information directly to the TOP. Generally, however, the flow of information should be retained.
Joseph Buch Madison #4	RA See question 8. <i>{ There should only be a single area responsible for maintaining data necessary for system analysis. The more often the same data is requested by multiple entities the more likely errors can occur. Also, the more often data is passed from entity to entity the more often errors can also occur. I would recommend that the RA be the central location for all data. All requests for data should go to the RA who would provide all responses.}</i>
Richard Kafka Pepco #1	RA
James Stanton Calpine #5	RA
Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.	
Fred Frederick Vectren #3	BA
Stuart Goza TVA #1	BA
The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.	
Toni Timberman BPA #1 Richard Schwarz PNSC #2	Gen The generator Owner or Operator should provide the unit characteristics and the real-time data.
Joanne Borrell FirstEnergy Sol #3	Gen The Generator is the best possible resource. As long as the data is accurately supplied I don't care who supplies it. I don't think the standard should be too proscriptive on who supplies the data.

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Thomas Pruitt Duke #1 Susan Morris SERC #2 Robert Reed TS (See List)	Gen 6 What do you mean by “system analysis”? 2) What type of “system analysis” is the TOP supposed to perform? 3) Are you referring to Generator Owner or Generator Operator or both above?
ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2 Ray Morella Ed Stein FirstEnergy #1, 6	Gen The Generator is the entity closest to the physical facilities so he should be the best possible resource. However, the TOP should use data from the Reliability Coordinator (RC), the BA, or the Planning Authority if he can’t get the data from the Generator. The Generator also may prefer to supply all his data via the BA or the RC. This should be allowed. As long as the data is accurately supplied I don’t care who supplies it. I don’t think the standard should be too proscriptive on who supplies the data.
Raj Rana AEP #1,3,5,6	Gen Should be required via the TOP’s interconnection agreement with the Generator.
Lloyd Linke MAPP #2	Gen A single source for this data is desired
Gerald Rheault Manitoba #1,3,5,6	Gen See comment in #8 <i>{ Manitoba Hydro believes that the generator owner must provide this data since as owner of the asset he is responsible for protecting that asset and establishing ratings consistent with the risk level he is willing to assume.}</i>
Alan Boesch NPPD #1	Gen The Generator should be responsible for getting the data to the RA. How it is accomplished should not be an issue. I would guess that in most situations it will be supplied by Planning.
Francis Halpin BPA Bus Line #5,6	Gen See #8 re: Gen Operator/Gen Owner <i>{ With regards to this and subsequent references to “Generator”; the Functional Model has recently been expanded (in draft at least) to include Generator Owners and Generator Operators. This standard should refer to those particular entities when making requirements for Generators.}</i>
Doug Hils Cinergy #1	Gen Providing data to the TOP would allow redundancy in the communication paths to the RA.

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<p>Ed Riley CA ISO #2  Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5  Dilip Mahendra SMUD #1  Lee Xanthakos SCE&amp;G #1  Tom Petrich (5) PG&amp;E #1  Todd Lucas (6?) Southern Co #1  FRCC 6-#1, 4-#2, 1-#2  William Smith Allegheny Pwr #1  Kim Warren IMO #2  Kathleen Goodman ISO NE #2  Karl Kohlrus CWL&amp;P #5  Joe Minkstein PG&amp;E #5</p>	<p>Gen</p>
<p>Although there is no clear consensus on which functional entity should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p>	
<p>Roger Green  Southern Co #5</p>	<p>PA  See comment on #8.  <i>{ Regardless of who receives and distributes the data, the generator owner should only have to provide the data to one group.}</i></p>
<p>Mike Miller  Southern Co #1</p>	<p>PA</p>
<p>Although there is no clear consensus on which functional entity should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p> <p>The issue of PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
<p>John Blazekovich  Exelon #1,3,5,6</p>	<p>RA, Gen  Either entity is OK</p>
<p>David Kiguel Hydro One #1  Ken Skroback AL Elec Coop #4</p>	<p>RA, Gen</p>
<p>Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p>	
<p>Darrel Richardson  Illinois Power #1, 3</p>	<p>BA, Gen  Although we checked both the BA and the Generator as possible sources, we feel that the information provided to the RA should be supplied by the Generator with a carbon to the BA.</p>
<p>Roman Carter  So Co Gen 3,5,6  (6 members)</p>	<p>BA, Gen</p>



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<p>Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p>	
Vern Colbert Dominion #1	RA, BA, Gen
<p>Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p>	
Gregory Campoli NY ISO #2	Gen, PA The TOP should be able to cross check data used by the Planning Authority with current data provided by the Generator.
Lee Westbrook Oncor #1 Tony Jankowski We-Energies #4	Gen, PA
<p>Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p> <p>The issue of PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
OLDTF (9?) 6 - #2 1 - #1,5	RA, BA, Gen, PA ERCOT performs these analysis as the RA, BA, and Planning Authority. Not certain why the T. Op performs system analyses. That's the RA's function. The RA may or may not accept the T. Op's analysis.
Sam Jones ERCOT #2	RA, BA, Gen, PA ERCOT performs these analyses as the RA, BA, and Planning Authority, although the TOP is not precluded from doing so. The RA must ensure the analyses are performed. In ERCOT, ERCOT performs the analyses. The RA may or may not accept the TOP's analyses.
Peter Burke ATC #1	RA, BA, Gen, PA With respect to the RA, it may be necessary to obtain this data for a unit outside TOP control when the unit has a major effect on the TOP system. As stated above it seems the entity who owns and operates the Generator should be responsible for providing the data needed to maintain the reliability of the system. One would not want to be in a position where the data was delivered to the RA and then to the TOP as this potentially "stale" data could cause problems with the network applications on the EMS. (And it also introduces another point of failure in the data supply chain which increases the likelihood that the availability of the data will be less than required.

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<p>Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p> <p>The Functional Model does not require that the entity serving as the BA even have a generator, therefore the BA could not serve as the default for providing generator data. The BA could in some cases be a source to transmit that data but cannot be assigned the default responsibility.</p> <p>The issue of PA needs to be resolved. The PA has not been formalized within the Functional Model (although it has been drafted and debated) The DT cannot resolve that issue and therefore will forward your comment to the Functional Model Review Task Group.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>The question should be restated to conform to the parenthetical statement – Who should provide the TOP or RA with generator operational characteristic data needed for system analyses? The Generator Owner function (consistent with the Revised Functional Model) should provide the generator data necessary for system analyses and operational performance analyses to any and all functions needing that data, including the TOP and RA. If needed, the TOP or RA may request the necessary generator data from the Transmission Owner to whom the Generator Owner should be obligated to provide the data as part of its interconnection and operating agreement with the Transmission owner.</p>
<p>Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>The generator operational characteristics are needed for many purposes and this information may be needed by others besides the RA. NERC should require a single coordination point for the submittal of this information. One must not be required to submit this same information repeatedly to different entities or “authorities”. E.g. – if there is already a requirement for generator operational characteristics to be supplied to the Planning Authority, then the PA may be authorized to provide it to the RA. Data confidentiality agreements may apply.</p>
<p>Although there is no clear consensus on which functional entity (the RA or Gen) should provide the generator data to the TOP for analysis purposes; there was a consensus that the TOP would not be assigned the responsibility to conduct regional Transmission Analysis. A TOP may be directed by an RA to provide such analysis but the RA would still be responsible to NERC for the analysis.</p> <p>This standard is limited to including requirements that were identified in the scope of the associated SAR.</p> <p>Data confidentiality agreements are addressed in the Certification SARs.</p>	

## Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

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### 10. Requirement 1 - Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Original Requirement:

The RA shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

#### Outcome (100% Compliance):

Real time system operating limits are monitored, and compared against the actual values associated with those limits.

#### Measures:

System operating limits are available in real time.

Actual real time values are available in a form that can be compared to the limits.

#### Revised Requirement:

**The reliability authority and planning authority shall identify and document which facilities (or groups of facilities) in the reliability authority's reliability area are subject to interconnection reliability operating limits.**

**The reliability authority and planning authority shall identify each interconnection reliability operating limit within the reliability authority's reliability area.**

**The reliability authority or planning authority shall identify a maximum response time (Tv) for any interconnection reliability operating limit that does not already have a Tv.**

#### Measures

**The entity responsible shall establish a list of interconnection reliability operating limits for the reliability authority's reliability area.**

**The entity responsible shall establish a maximum response time (Tv) for any interconnection reliability operating limit that does not already have a Tv.**

**The entity responsible shall establish a list of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits**

#### Summary Consideration:

Based on the consensus of the comments submitted, the requirement was changed to clarify that the RA shall monitor real time operating parameters to ensure that interconnection reliability operating limits are not violated. The word, 'actual' was removed from the modified requirement.

The Outcomes section has been eliminated from the standards format because it was causing confusion. The outcome was absorbed into the measures.

The levels of non-compliance for the original requirement focused on the availability of telemetered data. The consensus of the commenters was that everyone loses some telemetry at some point in time, and sanctions associated with this event may be unfair. The intent was to motivate entities to provide accurate data to system operators so they have good data to make informed decisions. A suggestion was made to focus on having a process or procedure in place to ensure monitoring could take place when telemetered data was unavailable, and this was adopted and is in the revised standard as a new measure.

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<p>No – Comments indicating requirement and measures need adjustment to focus on monitoring data, not on having data available</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>No The “requirement”, “measures(s)” and “outcome(s)” should state that the RA monitor and take corrective action to ensure the system is operated within the system operating limits. The RA System operating limits can also be established to avoid violating thermal facility limits affecting safety and reliability. Specifying that the system operating limits as “identified to prevent instability, uncontrolled separation or cascading outages” may be interpreted to exclude operating within limits based on other factors such as thermal overload.</p>
<p>This standard focuses on a subset of system operating limits, called interconnection reliability operating limits. The scope of this standard was established during the SAR refinement process and does not include all system operating limits.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No The levels of non-compliance should not be gauged by the availability of telemetered data but should be measured by the RA’s ability to monitor System Operating limits.</p>
<p>Many commenters expressed the same concern, and the standard has been revised accordingly. A new measure was added to ensure that RAs have a process or procedure in place to ensure that system operators will continue to receive data when telemetered data is unavailable. The levels of non-compliance have been revised so they no longer focus on the availability of telemetered data.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No The RA’s ability to monitor system operating limits is not limited by actual real time data. A better definition or a better term needs to be considered for actual real time data.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No Measures should be based on the RA’s ability to monitor the appropriate data and operating limits, not necessarily the availability of telemetry data. What does the term “Actual” imply in reference to real time data?</p>
<p>Many commenters expressed the same concern, and the standard has been revised accordingly. A new measure was added to ensure that RAs have a process or procedure in place to ensure that system operators will continue to receive data when telemetered data is unavailable. The levels of non-compliance have been revised so they no longer focus on the availability of telemetered data. In the original draft, the terms ‘actual real-time data’ and ‘real-time data’ were used to mean the same thing. In the revised standard, the word ‘actual’ has been omitted.</p>	
<p>Susan Morris SERC #2  Robert Reed TS (See List)</p>	<p>No The levels of non-compliance should not be determined by the availability of telemetered data; compliance should be based on the RA’s capability to monitor System Operating Limits. What do you mean by “actual real-time data”? Does it mean something different than “real-time data”? For consistency, the word actual should be removed from Measure 2.</p>

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<p>Many commenters expressed the same concern, and the standard has been revised accordingly. A new measure was added to ensure that RAs have a process or procedure in place to ensure that system operators will continue to receive data when telemetered data is unavailable. The levels of non-compliance have been revised so they no longer focus on the availability of telemetered data.</p> <p>In the original draft, the terms 'actual real-time data' and 'real-time data' were used to mean the same thing. In the revised standard, the word 'actual' has been omitted.</p>	
<p>Joanne Borrell Ed Stein Ray Morella FirstEnergy #1, 3,6</p>	<p>No</p> <p>We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROs. The revised standard states this much more clearly.</p>	
<p>Sam Jones ERCOT #2  OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No</p> <p>Please refer to the NERC Operating Limit Definition Task Force (OLDTF) report. ERCOT agrees with the contents of that report.</p> <p>The RA must ensure that system operating limits and interconnected reliability limits are established.</p> <p>The measures do not relate to the requirement. The requirement is that the RA shall monitor, not that the limits be available or that data is available. Those measures should pertain to the function(s) responsible for providing the limits and ratings, such as the Generator Owner or the Transmission Owner.</p> <p>The measure should be that the RA did indeed monitor the limits. What's unstated is over what timeframe. Continuous monitoring? Hourly? Other?</p>
<p>The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.</p> <p>This standard addresses only the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. When the first draft of this standard was posted, the SDT thought the Determine Facility Ratings, System Operating Limits and Transfer Capabilities SDT would define the subset of system operating limits addressed in this standard, but that did not happen. Consequently, this revised standard includes a definition of Interconnection Reliability Operating Limits, and includes a requirement that the RA identify these limits. This standard will not include a requirement that the RA establish system operating limits.</p> <p>Many commenters expressed the same concern about the mismatch between the requirement and the measures, and the standard has been revised accordingly.</p> <p>The definition of real-time monitoring: To use vision and hearing to scan various real-time data sources and draw conclusions about what the data indicates. Having the ability to scan real time data as conditions dictate.</p>	
<p><b>No – Mix of comments</b></p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>I agree with the intent of this requirement and associated performance/outcome but the written words need to be changed.</p> <p>(1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that</p>

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	<p>exceeds a limit. This concept also needs to be reflected in section 201 (e) Compliance Monitoring Process.</p> <p>(2) Delete the paranthetical phrases, (in real time) and (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system), in Requirement 1. We have already commented that it was allowable for monitoring to be done via voice communications from a manned substation which is not real time monitoring. The standard needs to add a more detailed definition of an Operating Security Limit. If this were done one of the paranthetical expressions would not be needed. The comments to Question 45 also apply to this question.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted.</p> <p>The revised standard includes the new term, “Interconnection Reliability Operating Limit” and a definition of this type of system operating limit will be posted for comment when the revised standard is posted. The term, ‘real-time’ is also being defined and its definition will also be posted for comment when the revised standard is posted. This parenthetical phrases are not included in the revised standard.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>We agree with the intent, but it is not written clearly. The RA should monitor, in real time, the data associated with the facilities that have defined system operating limits that if exceeded for a defined time limit (to be defined by the Facility Ratings Standard) could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>Additionally, the RA should be required to monitor the system and facilities for the impact of the next contingency.</p> <p>This standard requires the RA to only monitor the data associated with facilities that have defined operating limits identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. What about those thermal overloads and voltage conditions that do not result in catastrophic events? Should this standard ignore those thermal overloads and voltage conditions that will not result in instability or catastrophic events?</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted.</p> <p>One of the other requirements addresses real-time assessments.</p> <p>The scope of this standard must remain within the approved SAR. The SAR included the following purpose: To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The SDT interprets this to mean that this standard must focus only on the subset of system operating limits that, if exceeded would adversely impact the interconnection. The SDT has sent a letter to the Director of Standards, asking that he follow up on the fact that no identified standard addresses the type of system operating limits that, when exceeded, do not lead to catastrophic events.</p>	
<p>Compliance Managers</p>	<p>The RA shall monitor (in real time) transmission system data and equipment status related to specific system operating limits and direct actions to prevent OSL violations.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly.</p>	

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<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact outside of the New England Area following next contingency). If so, ISO New England would report this “OSL violation” to NPCC and NERC within 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area’s boundary), no external reporting will occur. We suggests this approach be adopted.</p> <p>By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.</p> <p>We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation if it cleared in less than 30 minutes.</p>
<p>The revised Standard is more clear than the first draft. The term, Interconnection Reliability Operating Limit has been introduced to clearly identify the subset of system operating limits being addressed in this standard. As proposed, the RA could identify a unique duration for each IROL – The duration <math>T_v</math> would then be the time that the RA had to ‘clear’ the IROL. In some cases, <math>T_v</math> may be 30 minutes, but in other cases, <math>T_v</math> may be longer or shorter.</p> <p>The proposed standard includes a requirement that the RA document all instances of exceeded an IROL, and report all instances of exceeding an IROL for a time that is greater than or equal to <math>T_v</math>. The type of report proposed does not include an analysis of the cause of the event. There is another proposed standard that is expected to require analysis of events such as exceeding IROLs for durations greater than or equal to <math>T_v</math>.</p> <p>The purpose of archiving data is to have it available in the event that further analysis is needed.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No</p> <p>The requirement should read “The RA shall continuously monitor real-time system parameters against system operating limits. System operating limits are established through the standard “Determine Facility Ratings, Operating Limits and Transfer Capabilities”.</p> <p>Please define “actual real time data”. If it is the same as “real time data” then Measure 2 should read “Real-time Data is available in a form that can be compared to the system operating limits.” We use the term “real-time data” as we have defined it in these comments.</p> <p>The “Outcome” should be deleted as it is a restatement of the Requirement and adds nothing to this standard.</p>

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In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted. While the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard includes a definition of system operating limits, that standard does not specifically address the subset of system operating limits addressed in this standard. The limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

In the original draft, the terms ‘actual real-time data’ and ‘real-time data’ were used to mean the same thing. In the revised standard, the word ‘actual’ has been omitted. The ‘Outcome’ section of all standards has been deleted.

Francis Halpin BPA Bus Line #5,6	<p>No</p> <p>In general we agree---but do have some reservations:</p> <p>In the requirements---The terminology related to instability, separation, and cascading outages are more often associated with Operating Security Limits than with System Operating Limits.</p> <p>In the outcomes---The word SHALL sounds too much like a requirement, in fact this whole statement mimics the requirement very closely. The outcome should relate meeting the requirement to its effect and might read something like..”The RA closely monitors the bulk electric system assuring reliable operation. At any rate, the Reliability Authority should be monitoring critical facilities that could cause a violation to the set operating limits – those critical facilities should have already been identified in the operating planning studies. ‘Assuring reliability’ means that upon a violation of a system limit, actions are taken to move the system back within the correct operating limits.</p>
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The purpose of this standard is to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. This standard addresses interconnection reliability operating limits (IROLs), a subset of all system operating limits as defined by the new standard, Determine Facility Ratings, System Operating Limits and Transfer Capabilities.

The Outcomes section has been deleted from all standards because it did mimic the requirements and measures and was confusing.

In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly.

**No – Other comments**

Gerald Rheault Manitoba #1,3,5,6	<p>No</p> <p>Manitoba Hydro believes that the performance requirement objective is correct; however there are instances where real time data is not readily available and may have to be inferred or synthesized from other measurements. The measures section above should be modified to reflect this reality.</p>
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The measures section of the standard has been modified. The revised draft includes a measure that requires the RA to have real time data available in a format that can be compared to IROLs. The revised definition of ‘real-time data’ does include real time measured values, calculated values and explicitly includes data that is manually collected.

Doug Hils Cinergy #1	<p>No</p> <p>The requirement is reversed, the actual real time data that should be monitored and compared to the system operating limits</p>
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In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly.



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<p>Thomas Pruitt Duke #1</p>	<p>No 1) What is the data provider's responsibility regarding provision of data to RA? Is the RA subject to non-compliance if the data provider's tools fail?</p>
<p>The standard has been revised to allow real time data to include manual collection of data. The revised standard also includes a measure that requires the RA to have a process or procedure in place to collect real-time data when automated real-time system operating data is unavailable.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>No We have concerns with potential effects of thermal overloads, we believe that thermal limits need to be addressed and monitored. The explanatory text in parenthesis appears to exclude thermal limits.</p>
<p>This standard is limited in scope to addressing the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The RA must identify what subset of all its system operating limits it will address as interconnection reliability operating limits (IROLs). If exceeding a thermal overload could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system, then the RA should identify that thermal overload as an IROL and this standard will apply to that limit. The SDT was concerned that there does not appear to be any proposed standard that addresses other system operating limits, and has asked the Director-Standards to address this issue.</p>	
<p>Alan Boesch NPPD #1</p>	<p>Yes/No I am very confused by this Standard. Who is going perform these functions the TOP or the RA. The Standard appears to have both performing the same function. The Standard needs to define the relationship between the RA and TOP. Maybe that could be accomplished in a opening paragraph. The requirements on the limits may be too broad. For example, an operating limit should also protect the safety of the public. If a facility was loaded to the point where it no longer met clearance requirements, the RA should respect these limits. The standards also seem to ignore voltage limits. There are limits to how high or low the voltage should be allowed to go before action is required. In addition to steady-state voltages, there should be a limit on transient voltages as well. It is not clear from this standard that these limits apply.</p>
<p>The requirement that the TOP perform this function has been dropped from the revised standard. This standard is limited in scope to addressing the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The RA must identify what subset of all its system operating limits it will address as interconnection reliability operating limits (IROLs). These may be any type of system operating limit as defined by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard. NERC's primary focus is on reliability – safety concerns associated with physical clearances are addressed through other organizations such as OSHA.</p>	
<p><b>Yes – Comments indicating additional clarification needed</b></p>	
<p>Peter Burke ATC #1</p>	<p>Yes Agree assuming the MISO would be the RA for ATC in which case this requirement expresses what MISO would be expected to be doing. Some accommodation should be made for new facilities for which it is sometimes difficult or impractical to have immediate operation of telemetering. There should be a grace period of something like three months following new construction.</p>
<p>Under the revised standard, each RA must specify how far in advance it needs data.</p>	
<p>Mike Miller</p>	<p>Yes</p>

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Southern Co #1	The operating limits should be associated with the ratings, or both should be defined for clarification.
<p>This standard addresses the subset of system operating limits called interconnection reliability operating limits (IROLs) that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The RA is responsible for establishing its system operating limits following the process identified in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The RA will then identify the subset of its system operating limits that will be IROLs.</p>	
Lloyd Linke MAPP #2	<p>Yes</p> <p>In the outcome section, actual data should be qualified as actual real time data.</p>
<p>The first draft of this standard used ‘actual real time data and real time data to mean the same thing. Use of the word, ‘actual’ was confusing. The revised standard does not include the word, ‘actual.’</p>	
Lee Westbrook Oncor #1	<p>Yes</p> <p>Since limits may specify both magnitude and duration, real time data may need to be integrated to compare to limits. That should be made more apparent here or in the definition of data.</p>
<p>The process for determining system operating limits is addressed in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. System operating limits may have duration components.</p> <p>Under this standard, the RA will identify a subset of its system operating limits as interconnection reliability operating limits (IROLs) and will identify, for each IROL, how long (T<sub>v</sub>) the limit may be exceeded before the risk to the interconnection is too great.</p>	
FRCC 6-#1, 4-#2, 1-#2	<p>Yes</p> <p>Real time data is actual data. It would seem that the reference to actual in item 2 is not necessary and may cause confusion. Also, as real time data may be temporarily unavailable from time to time, state estimation or other calculated data should be acceptable.</p>
<p>The definition of real-time data has been revised to include data from state estimation, or other calculated data as well as manually collected data.</p> <p>The first draft of this standard used ‘actual real time data and real time data to mean the same thing. Use of the word, ‘actual’ was confusing. The revised standard does not include the word, ‘actual.’</p>	
William Smith Allegheny Pwr #1	<p>Yes</p> <p>I agree with the intent. However, the RA is actually monitoring the actual real time data and comparing it against the system operating limits. A definition of “system operating limits” would allow for the removal of the parenthetical phrases in Requirement 1.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly.</p> <p>The revised standard introduces the term, ‘interconnection reliability operating limits’ (IROLs) to define the subset of system operating limits addressed in this standard. With this new term, the parenthetical phrases in the original Requirement 1 have been omitted.</p>	
Stuart Goza TVA #1	<p>Yes</p> <p>The applicable term “system operating limit” needs clarification</p>
<p>The revised standard introduces the term, ‘interconnection reliability operating limits’ (IROLs) to define the subset of system operating limits addressed in this standard.</p>	
Toni Timberman BPA #1	<p>Yes</p> <p>Thermal Overloads are not specifically mentioned. Is that assumed to be the</p>

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	cause of the Cascading Outages?
<p>The requirement that the TOP perform this function has been dropped from the revised standard. This standard is limited in scope to addressing the subset of system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The RA must identify what subset of all its system operating limits it will address as interconnection reliability operating limits (IROLs). These may be any type of system operating limit as defined by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.</p>	
<p>Alan Johnson Mirant #6          Albert M. DiCaprio MAAC #2          Bob Burkard NCMIPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          Ed Riley CA ISO #2          Fred Frederick Vectren #3          James Stanton Calpine #5          Joe Minkstein PG&amp;E #5          Joseph Buch Madison #4          Karl Kohlrus CWL&amp;P #5          Kim Warren IMO #2          Lee Xanthakos SCE&amp;G #1          Richard Kafka Pepco #1          Richard Schwarz PNSC #2          Roman Carter So Co Gen 3,5,6 (6 members)          Tony Jankowski We-Energies #4          Vern Colbert Dominion #1</p>	<p>Yes</p>

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### 11. Requirement 1 – Do you agree with these levels of non-compliance for this requirement?

#### Original Levels of Non-compliance:

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate data monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) are not being compared to actual data

#### Revised Levels of Non-compliance:

1. Not applicable
2. Not applicable
3. Not applicable
4. Any of the following:
  - **Interconnection reliability operating limits not available to operations personnel for real time use**
  - **Real-time data not available in a form that can be compared to the interconnection reliability operating limits**
  - **System operating parameters not monitored and compared against interconnection reliability operating limits.**

#### Summary Consideration:

The consensus of the comments submitted indicates that the “Levels of Non Compliance “ should be redefined to reflect the activity of monitoring the system data and not to the level of data availability. This change has been implemented and is reflected in the revised standard.

#### No – Comments about mismatch between measures and non-compliance

Albert M. DiCaprio MAAC #2	No The measure has to do with monitoring while the non-compliance has to do with data quality. Monitoring compliance is difficult – how does one say that the system is not being monitored correctly. However, the measures focus on whether or not the monitor is using good data.
Agreed. The levels of non-compliance have been adjusted to focus on monitoring. There are methods of measuring ‘covert’ behaviors, such as monitoring. One method of measuring ‘monitoring’ is to interview system operators who are working in a control room. The compliance monitor could ask the system operator to describe, in his or her own words, whether or not there are any IROLs that have been exceeded. By correctly answering this question, the system operator is demonstrating that monitoring has taken place.	
Gregory Campoli NY ISO #2	No Levels of non compliance should not be measured by availability of telemetered data. Levels of non compliance should be focused on the ability to monitor current system operating limits and system conditions. In some cases substitute data should be acceptable.

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<p>Many commenters agreed with you. The levels of non-compliance have been adjusted so they no longer focus on the availability of telemetered data. The revised standard includes a new definition of real-time data that specifically states that state estimated, calculated or manually collected data are all considered types of 'real-time data' for this standard.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>No Levels of non-compliance should focus on what the RA does with the data not if it gets it or not.</p>
<p>Many commenters agreed with you. The levels of non-compliance have been adjusted so they no longer focus on the availability of telemetered data and focus. The new measures focus on monitoring data and on having a process or procedure in place to address actions to take when automated real-time data is not available.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>No Levels of non-compliance should not be determined by the availability of data. It should be based more on the RA's capability to monitor System Operating Limits and whether they took appropriate action to resolve issues preventing the RA from doing the monitoring.</p>
<p>Many commenters agreed with you. The levels of non-compliance have been adjusted so they no longer focus on the availability of telemetered data and focus. The new measures focus on monitoring data and on having a process or procedure in place to address actions to take when automated real-time data is not available.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No The levels of Non-compliance are measurements of the communication system not the actual requirement, does not allow for using surrogate values such as state estimation or manually requested values to be used without the RA being at a level of non compliance.</p>
<p>Many commenters agreed with you. The levels of non-compliance have been adjusted so they no longer focus on the availability of telemetered data and focus. The new measures focus on monitoring data and on having a process or procedure in place to address actions to take when automated real-time data is not available. The revised definition of 'real-time data' includes the acceptability of state estimated and manually collected data.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No The levels of non-compliance should be based on whether you have sufficient and appropriate data regardless of the means for gathering the data to compare and evaluate conditions in terms of operating limits and are you monitoring that data.</p>
<p>Most commenters indicated that the levels of non-compliance should focus on monitoring, and not on the availability of data. The levels of non-compliance were adjusted to shift the focus from data availability to monitoring.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No Levels of non-compliance should not be determined by the availability of telemetered data. Much of the information used to meet Measure 2 is derived from measured values by the state estimator or other calculations. An RAs level of non-compliance should reflect that function's ability to meet the Requirement as reflected in the Measures: 1) have the SOLs available in real time, and 2) real-time data in a form that can be compared to the SOLs. Please revise the Levels of Non-compliance to conform to the Measures.</p>
<p>Most commenters indicated that the levels of non-compliance should focus on monitoring, and not on the availability of data. The levels of non-compliance were adjusted to shift the focus from data availability to monitoring.</p>	

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<p>OLDTF (9?) 6 - #2 1 - #1,5 Sam Jones ERCOT #2</p>	<p>Please refer to our comments to Q10. <i>{ The Measures don't relate to the Requirement. The requirement is that the RA "shall monitor" not that "the limits be available" or "data is available." Those measures should pertain to the function(s) responsible for providing the limits and ratings, such as the Generator Owner or Transmission Owner.</i> <i>The measure should be that the RA did indeed monitor the limits. What's unstated is over what time frame. Continuous monitoring? Hourly?}</i> The RA typically cannot control whether the data is provided, but may have acceptable and prudent measures in place to require the data. This comment would apply through the document.</p>
<p>Most commenters indicated that the levels of non-compliance should focus on monitoring, and not on the availability of data. The levels of non-compliance were adjusted to shift the focus from data availability to monitoring.</p> <p>The definition of real-time monitoring avoids assigning a specific frequency to this activity. The proposed definition recognizes that the system operator may be actively monitoring or may be in a position to actively monitor. The intent is to recognize that a system operator doesn't always keep any one display visible all the time. However – there should always be someone who is able to monitor - each company handles this in its own way. In many companies auditory cues are used to prompt system operators to critical status changes, and then the system operator begins scanning the appropriate display.</p> <p>Definition of real-time monitoring: To use vision and hearing to scan various real-time data sources and draw conclusions about what the data indicates. Having the ability to scan real time data as conditions dictate.</p> <p>Other sections of the standard were also revised to reinforce the RAs need to document what data it needs, and for other entities to provide that data as specified.</p>	
<p><b>No – Comments about loss of telemetry</b></p>	
<p>William Smith Allegheny Pwr #1</p>	<p>No There should not be non-compliance at level 1 or 2 when the RA or TOP stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working.</p>
<p>The revised requirement addresses the need to have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No Loss of telemetry should not result in a non-compliance. Taking no action to correct the problem of missing data or to obtain the data via another means, such as requiring the TOP to station an operator at the station or plant to monitor and report the data until such time that telemetry is restored, should be a non-compliance. Additionally, the problem could be due to a telemetry problem at the TOP, so why would the RA be penalized? Also, the problem could be within the ISN, again not within the direct control of the RA. Define "surrogate value" and "surrogate data" Suggested text: <b>Requirement 1:</b> The RA shall monitor (in real time) the data associated with facilities that have defined the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system). <del>And the actual real time data associated with those limits.</del></p>

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	<p><b>Measure(s):</b></p> <ol style="list-style-type: none"> <li>1. System operating limits are defined and available. <del>In real time</del></li> <li>2. Actual real time data is available in a form that can be compared to the system operating limits</li> </ol> <p><b>Outcome(s) (100% Compliance):</b></p> <p>The RA shall monitor in real time facilities with system operating limits and compare <del>these against</del> the actual data <del>associated</del> with those limits.</p>
<p>The revised requirement addresses the need to have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior. Specific references to ‘surrogate’ data have been dropped from the standard.</p> <p>The suggestions for wording changes to the requirement have been adopted in concept and are reflected in the revised standard.</p>	
<p>Richard Schwarz PNSC #2</p>	<p>No</p> <p>Levels 1 &amp; 2. The RA has no control as to availability of telemetered data. This responsibility should rest with the providing entity. The RA should monitor the data, be able to monitor the availability of telemetered data and be able to measure availability of data.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard include a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable.</p>	
<p>Toni Timberman BPA #1</p>	<p>No</p> <p># 4 is reasonable, but the other levels of non-compliance are related to data availability, not to the requirement that the RA monitor limits and associated data. The responsibility for data availability rests with those providing the data. At the most, the RA should have processes and procedures (and alarms?) in place to make them aware of when the data is bad...ie, when a real-time measurement has not been available for xx minutes, or when a data point value has not changed for xx minutes. (It is possible for the data link to be bad and for data to still be coming in but not updating).</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard include a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable.</p> <p>Having a process in place to recognize bad data is outside the scope of this standard.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No</p> <p>There can be legitimate reasons for telemeterd data being unavailable. Perhaps it would be more appropriate to change the timing in item 1 from “for up to 24 hours” to “for 12 to 24 hours”. Again, what is wrong with using state estimation data, or other calculated data? These non-compliance levels are not realistic.</p> <p>If item 2 is intended to be a next level of non-compliance, it should be between 24 to 48 hours.</p> <p>You do not ask a question about the compliance monitoring process, but we would like to provide comment on that section as well. Section 201 (e) states that the RA will demonstrate compliance thru the self certification process with re-certification on a schedule established by the compliance monitor. We do not agree with the re-certification part of this statement. The compliance monitoring of this standard is not for certification on an entity performing a function.</p> <p>There is no need for any re-certification in connection with this standard. The self certification process is just a way for an entity to provide information to the</p>

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	<p>compliance monitor that will be validated thru spot reviews etc. The re-certification statement appears in every compliance section in this document. It needs to be removed throughout.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p> <p>Self-certification is an established part of the existing NERC Compliance Enforcement Program. Self-certification is a process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard.</p> <p>Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed on an annual basis although they may be required more often.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>No</p> <p>Non-compliance Levels 1 and 2 need to include a lower limit before the non-compliance level would be in effect. For example, as written, the RA function would be in Level 1 violation if it misses 1 second of actual telemetered data. This does not seem reasonable. We suggest adding the phrase “and no proper corrective action was taken” to the end of both Levels 1 and 2. Thus:</p> <p>6 Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours and no proper corrective action was taken</p> <p>2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours and no proper corrective action was taken</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Thomas Pruitt Duke #1</p>	<p>No</p> <p>6 Loss of telemetry for short periods is an unfortunate but routine matter – with all that telemetry equipment in the field, it cannot be expected that none of it ever have downtime.</p> <p>6) The measures and levels of non-compliance should be re-evaluated to insure the achievement of the overall objective of this requirement.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Kim Warren IMO #2</p>	<p>No</p> <p>Loss of a few telemetered quantities does not constitute an inability of the RA to perform his “monitoring “(and analysis) functions if the State Estimator remains functional. (In fact State estimated quantities are deemed to be often more accurate than telemetered quantities .) Reporting of loss of actual telemetry should only be required when the RA can no longer perform these functions. Furthermore, reporting each actual telemetry loss will create too much overhead for the RA, the Regions and/or NERC.</p> <p>For a loss of the RA's “monitoring function”, a minimum time standard should be built into this compliance issue similar to “Exceeding an Operating Limit but Not a Reportable Violation” (question 5 &amp; 6). There should be a time allowance for short term failures (i.e. &lt; 30 minutes) of failure before reporting is required.</p>



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<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Stuart Goza TVA #1</p>	<p>No There should be some realistic acceptable period for failed telemetry before Level 1 violation occurs.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Fred Frederick Vectren #3</p>	<p>No At what point does telemetered data being unavailable constitute non-compliance (1 second, 1minute, 1 hour, etc.)?</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Alan Johnson Mirant #6</p>	<p>No May not be reading this correctly, but it seems unreasonable that if some data is missing during a 24-hour period that the RA is deemed to be non-compliant. Seems like there should be allowance for some sort of tolerance before being deemed non-compliant.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Peter Burke ATC #1</p>	<p>No Level 1 non-compliance is written “up to 24 hours.” This suggests that anything, even a single missed scan, qualifies as non-compliance.  As worded there is a significant amount of room for interpretation as to what constitutes non-compliance. If MISO loses the ability to scan one reading from one RTU for a day, this should not be considered a violation. If an RTU is lost for a day, a decision needs to be made as to how critical the data is to reliable operations. If an entire ICCP link is lost, 10 minutes may be too long. That will most likely be a judgement call based on the data supplied via the link that is down and system conditions at the time of the failure (sunny and 65 degrees versus thunderstorms rolling through the system). This needs more work before using it to assign fines for non-compliance.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	

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<p>Ray Morella Ed Stein Joanne Borrell FirstEnergy #1, 3, 6  ECAR Ops Panel #1 – 8, #5 – 1, #2 – 2</p>	<p>No</p> <ol style="list-style-type: none"> <li>(1) Operating Security Limits are not usually monitored in real time.</li> <li>(2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working.</li> <li>(3) Note 1 says – ‘Real Time could be continuous analog data or data sampled at a rate greater than or equal to one minute -----’. One minute is a unit of time not a rate. It should say – ‘Real time could be continuous analog data or data sampled faster than or equal to once a minute-----’.</li> <li>(4) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202 applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.</li> </ol>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted. The revised standard includes the new term, “Interconnection Reliability Operating Limit” and a definition of this type of system operating limit will be posted for comment when the revised standard is posted.</p> <p>The revised standard makes allowances for the manual collection of real time data.</p> <p>The definition of ‘real time data’ has been modified, and no longer includes the reference to data sampling rates.</p> <p>The duplicate requirement for the TOP has been dropped from this standard. The RA is the only function with responsibility for this requirement.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <ol style="list-style-type: none"> <li>(1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit.</li> <li>(2) The description of Level 1 Non-compliance and Level 2 Non-compliance under ‘Levels of Non-compliance for this Requirement’ should be changed. Level 1 non-compliance should read ‘Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 24 hours’. Level 2 non-compliance should read ‘Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 48 hours’. There is nothing wrong with using a manual reading phoned in from a substation or using a value calculated from surrounding parameters. A value calculated from surrounding parameters</li> </ol>

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	<p>might be better than an incorrect telemetered value. Some State Estimation systems use a value calculated from surrounding parameters instead of the telemetered value for certain circumstances.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was that the RA monitor real-time data and compare it against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted. The revised standard includes the new term, “Interconnection Reliability Operating Limit” and a definition of this type of system operating limit will be posted for comment when the revised standard is posted.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>No</p> <p>Should read, for example: “Actual telemetered data needed for monitoring system operating limits provided to the RA as specified, but unavailable to the operator, so surrogate value was monitored for up to 24 hours.” In each of the first two measures, this caveat noting that the compliance failure should only be considered a failure when the RA is getting the data, but mishandling it. Said another way, if the RA isn’t getting the data because the TOPs (or others) are not sending the data, then no non-compliance occurs.</p> <p>Level #1 should be 48 hours, level #2 should be 72 hours, and level #3 should have a 96 hour requirement. In many instances, 24 hours may be impractical especially with reliance on outside communication providers.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>This non-compliance matrix is completely inappropriate and ineffective. What is the scope of the telemetering unavailability required to achieve these levels of non-compliance? Is the goal here to achieve compliance with reliability standards or measure the amount of redundant telemetering equipment? It is clearly possible to maintain reliability absent some telemetering as long as an effective State Estimator is in use. Additionally, how much telemetering must be unavailable in order to be non-compliant: One point, five points, 5,000 points, etc.? Compliance should be measured against how many violations that an area had which were not cleared over a specified period of time. Only the RA should make the determination of how much telemetering is enough to have effective limit management.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p><b>No – Comments indicating alternate levels of non-compliance needed</b></p>	
<p>Susan Morris SERC #2</p> <p>Robert Reed TS (See List)</p>	<p>No</p> <p>6 Levels 1 and 2 imply that use of substitute data is unacceptable.</p> <p>2) The only important level of non-compliance listed above is level 4.</p> <p>3) There seems to be no penalty for failing to identify a System Operating Limit. If an entity identifies limits and then does not monitor them, then the entity is subject to a greater penalty than an entity who fails to identify the limits. Need a process</p>

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<p>Thomas Pruitt Duke #1</p>	<p>to identify SOLs and to assess system conditions, both real-time and forecast. The measures should be: a) do you have the data; b) do you have the limits; c) are you monitoring the data.  4) What does “surrogate value” mean? Levels 1 and 2 should be rewritten to consider the suggested measures listed in these comments.</p>
<p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable.  The revised standard includes a requirement that IROLs be identified.  The term, ‘surrogate value’ is not used in the revised standard.  The levels of non-compliance were revised to reflect the comments submitted – emphasis is on ensuring that system operators have the limits and compare real time data against those limits. A penalty could be assessed if an entity didn’t have a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>No  Should be revised to state that as long as limits are observable the RA is compliant. Level 4 needs to be clarified so that momentary telemetry problems (loss of telemetry) does not result in a level 4 violation.</p>
<p>The levels of non-compliance were revised to conform with the changes made to the requirement. The emphasis in the new levels of non-compliance is on ensuring that system operators have the limits and compare real time data against those limits. A penalty could be assessed if an entity didn’t have a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No  Level 4 is the most important metric for this Requirement and we feel that Level 1, 2 and 3 are unnecessary.</p>
<p>The levels of non-compliance were revised to conform with the changes made to the requirement. The emphasis in the new levels of non-compliance is on ensuring that system operators have the limits and compare real time data against those limits. A penalty could be assessed if an entity didn’t have a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>No  Manitoba Hydro agrees with using a set of levels to define non-compliance. However the set of limits defined here may not be appropriate and should be related to the risk on the system. In the event of loss of data, perhaps a lower set of limits should be applied till the regular data can be re-established.</p>
<p>Many commenters indicated that temporary loss of data should not be a non-compliance event– and the requirement was changed to reflect the consensus of the comments submitted.  The levels of non-compliance were revised to conform with the changes made to the requirement. The emphasis in the new levels of non-compliance is on ensuring that system operators have the limits and compare real time data against those limits. A penalty could be assessed if an entity didn’t have a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No  Level 1 may require a more stringent time frame than a 24 hour loss of telemetered data. RAs should have the most accurate information at all times. There is no apparent check whether the surrogate value is as accurate as the actual telemetered data. Reliability may be greatly jeopardized if the RA employs</p>

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	<p>inaccurate data for a 24 hour period. We recommend for Level 1 compliance that surrogate values not be relied on for more than 4 hours. This provides incentive to recover from the loss of data well within the operating time frame of the wholesale market 8 hour block schedules. For Level 2 compliance, 24 hours is appropriate. As an alternative, there could be some recognition in the suggested compliance levels for the time of day (&amp; day of week) as to when the data is not available. This system visibility that this information provides is most critical when the system is in danger of a operating limit violation.</p>
<p>Many commenters indicated that temporary loss of data should not be a non-compliance event. The levels of non-compliance were revised to conform with the changes made to the requirement. The emphasis in the new levels of non-compliance is on ensuring that system operators have the limits and compare real time data against those limits. A penalty could be assessed if an entity didn't have a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No I am assuming that the RA will not get the data directly but will receive the data from another source. It does not seem appropriate to sanction them for something they do not control. Maybe the non-compliance should be associated with the equipment the RA uses for monitoring the system. In addition the levels of non-compliance use the term "Actual telemetered data" while the footnote to the measures states that real-time, state estimated or calculated data is acceptable. There is at a minimum confusion with the way these terms are stated if not outright conflict. The standard needs to be consistent between the measurement and level of non-compliance.</p>
<p>Many commenters indicated that temporary loss of data should not be a non-compliance event. The levels of non-compliance were revised to conform with the changes made to the requirement. The emphasis in the new levels of non-compliance is on ensuring that system operators have the limits and compare real time data against those limits. A penalty could be assessed if an entity didn't have a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p> <p>There was inconsistency in the definition and application of the terms used to describe real time data. The definition of 'real-time data' has been updated and will be posted for comment when the revised standard is posted. The term is used more consistently in the revised standard.</p>	
<p>Compliance Managers</p>	<p>Levels of non-compliance based on time over limit, and magnitude of limit violation. (Something similar to the matrix that is used in the WSCC would provide for the practical measuring of non-compliance.)</p>
<p>Since this requirement is addressing monitoring, not acting to control the limits, these levels of non-compliance weren't adopted for this requirement.</p>	
<p><b>Other Comments on Compliance</b></p>	
<p>Ed Riley CA ISO #2</p>	<p>No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p>It is important that entities responsible for compliance understand the ramifications of compliance as well as the standard itself. The standard, therefore, will contain compliance requirements along with the standard itself. This principle is inherent in the development of all new standards.</p>	

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Bob Burkard NCMPA1 # 3,4,5 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Francis Halpin BPA Bus Line #5,6 James Stanton Calpine #5 Joe Minkstein PG&E #5 Joseph Buch Madison #4 Karl Kohlrus CWL&P #5 Mike Miller Southern Co #1 Richard Kafka Pepco #1 Vern Colbert Dominion #1	Yes
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**12. Requirement 2 – Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Original Requirement:**  
 The TOP shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.

**Outcomes (100% Compliance):**  
 Real time system operating limits are monitored, and compared against the actual data associated with those limits

**Measures:**  
 System operating limits are available in real time  
 Actual real time data is available in a form that can be compared to the system operating limits

**Revised Requirement: None**

**Summary Consideration:**

Several commenters indicated that this requirement should be removed or adjusted. Under the Functional Model, the RA has the principal responsibility for monitoring reliability-related data within its Reliability Authority Area. The IROLs addressed in this standard fall into this category of reliability-related data. Some of the responsibility to monitor the system operating limits and voltage limits for the local network may be delegated to the TOP through written agreement, but those agreements are addressed in the standards being developed for certification. Several commenters indicated a need for a requirement for TOPs to monitor system operating limits. The system operating limits monitored by the TOP are not IROLs and are outside the scope of this standard. Because so many commenters indicated a desire for a requirement for the TOP, the SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP’s requirement to monitor its system operating limits.

<b>No – Comments indicating this is an RA responsibility</b>	
Richard Kafka Pepco #1	No This is a RA responsibility, although TOP will physically monitor actual conditions.
<b>Agreed. The requirement has been removed from the revised standard.</b>	
Toni Timberman BPA #1	No According to the Functional Model, “The Transmission Operator operates and maintains the transmission facilities, and is responsible for local reliability functions. The Transmission Operator under the Reliability Authority’s direction can take action, such as implementing voltage reductions, to help mitigate an Energy Emergency.”  This does not say that the Transmission Operator is responsible for the reliability of the bulk Power System. Does the term “operate” in the functional model include the responsibility to “monitor”?

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<p>The Functional Model does include the following TOP responsibility which does include monitoring:</p> <ul style="list-style-type: none"> <li>Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations</li> </ul> <p>Although the Functional Model does assign the TOP some monitoring responsibilities, the system operating limit addressed in this standard are the subset of system operating limits that are called, 'interconnection reliability operating limits' (IROLs). IROLs are those system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Under the Functional Model, IROLs are monitored by the RA, not by the TOP.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No</p> <p>6 Whose responsibility is it to “. . . monitor (in real time) the system operating limits . . .” – the RA or the TOP?</p> <p>2) Whose compliance is more significant than the other?</p>
<p>The scope of this standard is limited to those system operating limits that are now called 'interconnection reliability operating limits' or IROLs. An IROL is a system operating limit that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The Functional Model assigns monitoring to both the RA and the TOP. However, the RA is expected to monitor all reliability-related data within its RA area, and is responsible for taking actions or directing others to act to relieve reliability threats and violations in its Reliability Authority Area.</p> <p>The TOP is responsible for local network integrity by defining operating limits, developing contingency plans, and monitoring operations.</p> <p>The SDT interpreted this to mean that this standard should not include a requirement that the TOP monitor IROLs.</p>	
<p>Robert Reed TS (See List)</p>	<p>No</p> <p>1) 3) This requirement should be for the TOP to provide to the RA telemetry data and to monitor system limits and OSLs under the direction of the RA.</p>
<p>There is another requirement in this revised standard that requires the TOP to provide data to its RA.</p> <p>This standard focuses on the subset of system operating limits called, 'interconnection reliability operating limits' (IROLs). These are the limits that, if exceeded, may lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. It is the RA's responsibility to ensure that these limits are not exceeded. The RA may delegate the responsibility for monitoring these IROLs to its TOPs, but the RA would still be held responsible for operating the system within the limits.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>It is unclear by this requirement alone, who has jurisdiction for monitoring Operating Limits RA or TOP. The TOP's ability to monitor system operating limits is not limited by actual real time data. A better definition or a better term needs to be considered for actual real time data.</p>
<p>The definition of real-time data has been revised, and the revised definition will be posted for comment with the revised standard.</p> <p>The standard has been revised to delete the requirement that the TOP monitor the system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. As several commenters noted, under the Functional Model, the TOP only has responsibility for local network integrity.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No</p> <p>This requirement is a duplicate of what was in Requirement 1 for the RA. We are</p>



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	<p>confused as to whose responsibility it is to monitor the system operating limits. Shouldn't the requirement be for the TOP to provide telemetry data to the RA so the RA can monitor and assess the entire area?</p>
<p>The standard has been revised to delete the requirement that the TOP monitor the system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. As several commenters noted, under the Functional Model, the TOP only has responsibility for local network integrity.</p> <p>The revised standard does include a requirement, as suggested, that the TOP provide data to the RA.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>This requirement is duplicative to Requirement 1 for the RA. The standard should require that system conditions be monitored to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The standard should require either the RA or the TOP to do this, but not require that they both do this. We prefer for the standard to require the RA perform this function, and that this is not a function that the RA can delegate to a TOP. The RA has a bigger picture, and can analysis the impact of one TOP on another TOP better then the TOP's can. Further, the RA has the real-time data required to monitor Regional conditions, that a TOP will not have.</p> <p>This requirement should be re-worded to require that the TOP provide real time data, equipment limits, and model updates to their RA as specified by their RA.</p> <p>This standard requires the TOP to only monitor the data associated with facilities that have defined operating limits identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. What about those thermal overloads and voltage conditions that do not result in catastrophic events? Should this standard ignore those thermal overloads and voltage conditions that will not result in instability or catastrophic events?</p>
<p>The standard has been revised to delete the requirement that the TOP monitor the system operating limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. As several commenters noted, under the Functional Model, the TOP only has responsibility for local network integrity.</p> <p>The revised standard does include a requirement, as suggested, that the TOP provide data to the RA.</p> <p>This standard is limited to the subset of system operating limits called, 'interconnection reliability operating limits' (IROLs).</p> <p>Several commenters indicated a need for a requirement for TOPs to monitor system operating limits or for a requirement that addresses a broader range of system operating limits. Because so many commenters indicated a desire for a requirement for the TOP or a desire for a standard that addresses a broader range of system operating limits, the SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP's requirement to monitor its system operating limits.</p>	
<p>Compliance Managers</p>	<p>Delete: Duplication of effort between RC and TOP</p>
<p>The standard has been revised to delete this requirement.</p>	
<p><b>No – Comments about mismatch between requirement and measures</b></p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>No</p> <p>System operating limits can also be established to avoid violating thermal facility limits. Specifying that the system operating limits as "identified to prevent instability, uncontrolled separation or cascading outages" may be interpreted to exclude operating within limits based on other factors such as thermal overload.</p>

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<p>This standard is limited to the subset of system operating limits called, 'interconnection reliability operating limits' (IROLs). The scope of this standard was set during the development of the associated SAR. To change the scope, all work on the Standard would stop, and the SAR would need to be revised. Several other commenters shared your concern that a requirement is needed that addresses a broader range of system operating limits. The SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP's requirement to monitor its system operating limits.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No Measures should be based on the TOP's ability to monitor the appropriate data and operating limits, not necessarily the availability of telemetry data.</p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard.</p>	
<p>Sam Jones ERCOT #2  OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No Same comments as in #10 above. The measures don't relate to the requirement. { <i>The RA must ensure that system operating limits and interconnected reliability limits are established.</i>  <i>The measures do not relate to the requirement. The requirement is that the RA shall monitor, not that the limits be available or that data is available. Those measures should pertain to the function(s) responsible for providing the limits and ratings, such as the Generator Owner or the Transmission Owner.</i>  <i>The measure should be that the RA did indeed monitor the limits. What's unstated is over what timeframe. Continuous monitoring? Hourly? Other?}</i></p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard. The comments provided were used in revising the same requirement for the RA.</p>	
<p><b>Comments about revising the phraseology</b></p>	
<p>Doug Hills Cinergy #1</p>	<p>No First the requirement is reversed, the actual real time data that should be monitored and compared to the system operating limits. Second operating limits set in the SCADA or EMS are not commonly changed from day to day to match current.</p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard. The comments provided were used in revising the same requirement for the RA.</p>	
<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1, 3, 6  ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No We agree with the intent of this requirement and associated performance/outcome but the written words need to be changed. (1) Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit. This concept also needs to be reflected in section 202 (e) Compliance Monitoring Process.</p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard. The comments provided were used in revising the same requirement for the RA.</p>	
<p>ECAR Ops Panel</p>	<p>No</p>

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<p>#1 – 8 #5 – 1 #2 – 2</p>	<p>Delete the paranthetical phrases, (in real time) and (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system), in Requirement 1. We have already commented that it was allowable for monitoring to be done via voice communications from a manned substation which is not real time monitoring. The standard needs to add a more detailed definition of an Operating Security Limit. If this were done one of the paranthetical expressions would not be needed. The comments to Question 45 also apply to this question.</p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard. The comments provided were used in revising the same requirement for the RA.</p>	
<p><b>No – Comments about expanding scope of requirements or measures</b></p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No Our comments to Requirement 1 apply to Requirement 2 also. { The requirement should read “The RA shall continuously monitor real-time system parameters against system operating limits. System operating limits are established through the standard “Determine Facility Ratings, Operating Limits and Transfer Capabilities”. Please define “actual real time data”. If it is the same as “real time data” then Measure 2 should read “Real-time Data is available in a form that can be compared to the system operating limits.” We use the term “real-time data” as we have defined it in these comments. The “Outcome” should be deleted as it is a restatement of the Requirement and adds nothing to this standard.} Requirement 2 should also reflect the requirement that the TOP monitor all facilities to assure the real-time system parameters are under Facility Ratings.</p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard. The comments provided were used in revising the same requirement for the RA.</p>	
<p>This standard is limited to addressing the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Adding requirements that address facility ratings is outside the scope of this standard.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>No We have concerns with potential effects of thermal overloads, we believe that thermal limits need to be addressed and monitored.</p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard.</p>	
<p>This standard is limited to addressing the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. If a thermal overload could cause instability, uncontrolled separation or cascading outages, then it is addressed by this standard.</p>	
<p>Roger Green Southern Co #5</p>	<p>No This requirement is too subjective. The necessary actions are not identified to assess compliance. Some results, such as voltage outside a defined limit, should require notice to nuclear generators so that regulatory Technical Specification requirements for continued operation can be met. Otherwise, the units could either be forced offline or into limited operation. This standard should include the requirement that a written agreement be established between the RA, TOP and generators identifying the actions to be taken by mutual agreement. Reference</p>

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	IEEE Std 765-2002 Annex A for further details on this proposed change.
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard.</p> <p>The Certification SARs currently being developed address agreements such as those you have suggested. Adding requirements for these agreements in this standard would be duplicative, and we are trying to avoid putting an entity into a situation where it could be fined twice for the same infraction.</p>	
<p><b>No – Comments about telemetry</b></p>	
David Kiguel Hydro One #1	<p>No</p> <p>The levels of non-compliance should not be gauged by the availability of telemetered data but should be measured by the RA's ability to monitor System Operating limits. Please see our comments under item # 44 (Regional and Interconnection Differences).</p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard.</p> <p>The comments provided were used in revising the same requirement for the RA.</p>	
Gerald Rheault Manitoba #1,3,5,6	<p>No</p> <p>See comment in #10.</p> <p><i>{ Manitoba Hydro believes that the performance requirement objective is correct; however there are instances where real time data is not readily available and may have to be inferred or synthesized from other measurements. The measures section above should be modified to reflect this reality.}</i></p>
<p>Based on a review of the comments submitted and a review of the Functional Model, this requirement has been dropped from this standard.</p> <p>The comments provided were used in revising the same requirement for the RA.</p>	
<p><b>Yes – Comments indicating this is an RA responsibility</b></p>	
Lee Xanthakos SCE&G #1	<p>Yes/No</p> <p>I agree with requirements, but I do not agree that it written exactly the same as the RAs. As a matter of fact, my opinion of the entire draft is that a distinction is made between the requirements of an RA and a TOP. Why have two entities required doing the same thing?</p>
<p>Many entities agreed with you, and all of the redundant requirements have been removed from the revised standard.</p> <p>The SDT reviewed the Functional Model and determined that the requirement for ensuring operation within the limits being addressed in this standard is the responsibility of the RA, not the TOP. The TOP is only responsible for local network integrity.</p>	
Alan Boesch NPPD #1	<p>Yes</p> <p>I am very confused by this Standard. Who is going perform these functions the TOP or the RA. The Standard appears to have both performing the same function. The Standard needs to define the relationship between the RA and TOP. Maybe that could be accomplished in a opening paragraph. The requirements on the limits may be too broad. For example, an operating limit should also protect the safety of the public. If a facility was loaded to the point where it no longer met clearance requirements, the RA should respect these limits. The standards also seem to ignore voltage limits. There are limits to how high or low the voltage should be allowed to go before action is required. In addition to steady-state voltages, there should be a limit on transient voltages as well. It is not clear from this standard that these limits apply.</p>

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Many entities agreed with you, and all of the redundant requirements have been removed from the revised standard.

The SDT reviewed the Functional Model and determined that the requirement for ensuring operation within the limits being addressed in this standard is the responsibility of the RA, not the TOP. The TOP is only responsible for local network integrity.

NERC's primary focus is on reliability, not on safety. There are other organizations, such as OSHA that address public safety.

This standard's focus is limited to the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The revised standard calls these, 'interconnection reliability operating limits' or IROs.

Several other commenters shared your concern that a requirement is needed that addresses a broader range of system operating limits. The SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP's requirement to monitor its system operating limits.

Kathleen Goodman ISO NE #2	Yes/No This standard should recognize that the RA, CA and TOP functions may all be performed at one location with primary responsibility enforced at the RA.
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Although these functions may all be performed by a single entity, but the entity that accepts responsibility for the RA function must comply with all of the requirements assigned to the RA function. We do expect that there will be many entities that perform a combination of functions.

Kim Warren IMO #2	Yes/No Yes, only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles (eg. Switching, maintenance, outage & construction notification) that the Functional Model defines for the TOP.  Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.
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When an entity becomes certified to perform a function, that entity must accept responsibility for all of the duties assigned to that function. The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function.

**Yes – Comments about revising the phraseology**

Mike Miller Southern Co #1	Yes Are Operating limits the same as ratings?
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No – facility ratings are different from operating limits. The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard drafting team has defined these terms as follows:

Facility Rating: The maximum or minimum voltage, current, real or reactive power flow through a facility that does not violate an applicable rating of any equipment comprising the facility

System Operating Limit: The maximum or minimum permissible loading on a facility or a limited group of facilities without violating applicable Facility Ratings and reliability criteria, as determined through system studies and/or operational experience. System Operating Limits may result from voltage, thermal or stability limits associated with one or more facilities. (Stability and voltage limits will be reflected as a permissible loading level). System Operating Limits may refer to limits in both real-time operations and planning studies.

This standard focuses on the subset of System Operating Limits that are called, ‘ Interconnection Reliability Operating Limits’ or IROLs. These are the subset of system operating limits that, if exceeded could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Stuart Goza TVA #1	Yes The applicable term “system operating limit” needs clarification.
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The term, ‘system operating limit’ was defined by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities as follows: The maximum or minimum permissible loading on a facility or a limited group of facilities without violating applicable Facility Ratings and reliability criteria, as determined through system studies and/or operational experience. System Operating Limits may result from voltage, thermal or stability limits associated with one or more facilities. (Stability and voltage limits will be reflected as a permissible loading level). System Operating Limits may refer to limits in both real-time operations and planning studies.

This standard focuses on the subset of System Operating Limits that are called, ‘ Interconnection Reliability Operating Limits’ or IROLs. These are the subset of system operating limits that, if exceeded could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Lee Westbrook Oncor #1	Yes See Requirement 1 comment. { Since limits may specify both magnitude and duration, real time data may need to be integrated to compare to limits. That should be made more apparent here or in the definition of data.}
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The definition for real-time data has been revised and addresses your concern:  
Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values – may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol and or SCADA Data), and manually collected data

William Smith Allegheny Pwr #1	Yes I agree with the intent. However, the RA is actually monitoring the actual real time data and comparing it against the system operating limits. A definition of “system operating limits” would allow for the removal of the parenthetical phrases in Requirement 1.
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This requirement has been dropped from this standard. Your comments were used in revising the similar requirement for the RA.

A definition of the subset of system operating limits addressed in this standard has been added to this standard. This subset of system operating limits is called, ‘interconnection reliability limits’ or IROLs. The addition of this term and its definition has allowed us to eliminate the parenthetical phrase in Requirement 1. This requirement for the TOP was dropped from this standard.

**No – Comments about expanding scope of requirements or measures**

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Francis Halpin BPA Bus Line #5,6	Yes I think what the TOP is monitoring is not the limits but the critical parts of the system to ensure the limits are not violated.
Agreed. This requirement was dropped from this standard, but your comments were used in modifying the requirement for the RA.	
Peter Burke ATC #1	Yes I am not aware of many TOPs that have the tools needed to study voltage stability and/or transient stability for their systems in real time. MISO has these tools and is working to implement them. If the standard is implemented as written it will require a significant investment and development effort at many sites to put the necessary reliability monitoring tools in place. When done, we have duplication of effort and significant costs incurred with a limited benefit to the system.  I do believe that the TOP should be capable of monitoring its system and analyzing to make sure it can survive first contingency events and maintain operations within acceptable guidelines. This requires a functioning State Estimator, Security Screening/Contingency Analysis, and Online Power Flow.
Under the Functional Model, the RA has the principal responsibility for monitoring reliability-related data within its Reliability Authority Area. The IROLs addressed in this standard fall into this category of reliability-related data. Some of the responsibility to monitor the system operating limits and voltage limits for the local network may be delegated to the TOP through written agreement, but those agreements are addressed in the standards being developed for compliance.	
Alan Johnson Mirant #6 Albert M. DiCaprio MAAC #2 Bob Burkard NCMPA1 # 3,4,5 Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Ed Riley CA ISO #2 Fred Frederick Vectren #3 James Stanton Calpine #5 Joe Minkstein PG&E #5 Joseph Buch Madison #4 Karl Kohlrus CWL&P #5 Lloyd Linke MAPP #2 Roman Carter So Co Gen 3,5,6 (6 members) Thomas Pruitt Duke #1 Tony Jankowski We-Energies #4 Vern Colbert Dominion #1	Yes

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**13. Requirement 2 – Do you agree with these levels of non-compliance for this requirement?**

**Original Levels of Non-compliance:**

1. Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours
2. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours
3. Not Applicable
4. System operating limit(s) were not being compared to actual data

**Revised Levels of Non-compliance: None**

**Summary Consideration:**

Several commenters indicated that this requirement should be removed or adjusted. Under the Functional Model, the RA has the principal responsibility for monitoring reliability-related data within its Reliability Authority Area. The IROLs addressed in this standard fall into this category of reliability-related data. Some of the responsibility to monitor the system operating limits and voltage limits for the local network may be delegated to the TOP through written agreement, but those agreements are addressed in the standards being developed for compliance. Several commenters indicated a need for a requirement for TOPs to monitor system operating limits. The system operating limits monitored by the TOP are not IROLs and are outside the scope of this standard. Because so many commenters indicated a desire for a requirement for the TOP, the SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP’s requirement to monitor its system operating limits.

No – Comments about mismatch between measures and non-compliance	
George Bartlett Entergy Svcs 1	<p>No</p> <p>Our comments to Requirement 1 apply to Requirement 2 also</p> <p><i>{ Levels of non-compliance should not be determined by the availability of telemetered data. Much of the information used to meet Measure 2 is derived from measured values by the state estimator or other calculations. An RAs level of non-compliance should reflect that function’s ability to meet the Requirement as reflected in the Measures: 1) have the SOLs available in real time, and 2) real-time data in a form that can be compared to the SOLs. Please revise the Levels of Non-compliance to conform to the Measures.}</i></p>
<p>Several commenters agreed with you, and your recommendations have been adopted and are reflected in the revisions made to this requirement for the RA.</p>	
Albert M. DiCaprio MAAC #2	<p>See comments to #11</p> <p><i>{The measure has to do with monitoring while the non-compliance has to do with data quality. Monitoring compliance is difficult – how does one say that the system is not being monitored correctly. However, the measures focus on whether or not the monitor is using good data.}</i></p>



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<p>This requirement was dropped from this standard, but your comments were used in addressing the levels of non-compliance for the RA.</p> <p>The levels of non-compliance have been adjusted to focus on monitoring. There are methods of measuring 'covert' behaviors, such as monitoring. One method of measuring 'monitoring' is to interview system operators who are working in a control room. The compliance monitor could ask the system operator to describe, in his or her own words, whether or not there are any IROLs that have been exceeded. By correctly answering this question, the system operator is demonstrating that monitoring has taken place.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No</p> <p>The levels of non-compliance should be based on whether you have sufficient and appropriate data regardless of the means for gathering the data to compare and evaluate conditions in terms of operating limits and are you monitoring that data.</p>
<p>This requirement was dropped from this standard. For the similar RA requirement, most commenters indicated that the levels of non-compliance should focus on monitoring, and not on the availability of data. For the RA requirement, the levels of non-compliance were adjusted to shift the focus from data availability to monitoring.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>No</p> <p>Levels of non-compliance should focus on what the TOP does with the data not if it gets it or not.</p>
<p>This requirement was dropped from this standard, but your comments were used in addressing the levels of non-compliance for the RA.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>Levels of non compliance should not be measured by availability of telemetered data. Levels of non compliance should be focused on the ability to monitor current system operating limits and system conditions.</p>
<p>This requirement was dropped from this standard, but your comments were used in addressing the levels of non-compliance for the RA.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>No</p> <p>See answer to question # 11.</p> <p><i>{ Levels of non-compliance should not be determined by the availability of data. It should be based more on the RA's capability to monitor System Operating Limits and whether they took appropriate action to resolve issues preventing the RA from doing the monitoring. }</i></p>
<p>This requirement was dropped from this standard, but your comments were used in addressing the levels of non-compliance for the RA.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No</p> <p>Again the Non- compliance levels are is a monitoring of the communication system rather than a measure of how the system is being operated.</p>
<p>This requirement was dropped from this standard, but your comments were used in addressing the levels of non-compliance for the RA.</p>	
<p>Toni Timberman BPA #1</p>	<p>No</p> <p>See response to Requirement 1</p> <p><i>{# 4 is reasonable, but the other levels of non-compliance are related to data availability, not to the requirement that the RA monitor limits and associated data. The responsibility for data availability rests with those providing the data. At the most, the RA should have processes and procedures (and alarms?) in place to make them aware of when the data is bad...ie, when a real-time measurement has not been available for xx minutes, or when a data point value has not changed for xx minutes. (It is possible for the data link to be bad and for data to</i></p>

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	<i>still be coming in but not updating).}</i>
<p>This requirement was dropped from this standard.          Having processes in place to identify ‘bad data’ is beyond the scope of this standard.</p>	
<p>Sam Jones          ERCOT #2</p>	<p>No          Same comments as #11 above.  <i>{The RA typically can’t control whether the data is provided, but may have acceptable and prudent measures in place to require the data. This comment would apply throughout this document.</i>  <i>The RA must ensure that system operating limits and interconnected reliability limits are established.</i>  <i>The measures do not relate to the requirement. The requirement is that the RA shall monitor, not that the limits be available or that data is available. Those measures should pertain to the function(s) responsible for providing the limits and ratings, such as the Generator Owner or the Transmission Owner.</i>  <i>The measure should be that the RA did indeed monitor the limits. What’s unstated is over what timeframe. Continuous monitoring? Hourly? Other?}</i>          It appears that there will likely be numerous Level 1 non-compliances unless a threshold is established. System Operation experience shows that metering signals fall in and out. If Level 1 indicates that every time a metering signal is lost, you are non-compliant. This needs some reconsideration. The drafting team should consider that state estimators can supply some of the data in a short term.</p>
<p>While this requirement has been dropped from the standard, your suggestions were applied to the same requirement for the RA.          Most commenters indicated that the levels of non-compliance should focus on monitoring, and not on the availability of data. The levels of non-compliance were adjusted on the RA’s requirement to shift the focus from data availability to monitoring.          Other sections of the standard were also revised to reinforce the RAs need to document what data it needs, and for other entities to provide that data as specified.</p>	
<p><b>No – Comments about telemetry</b></p>	
<p>FRCC          6-#1, 4-#2, 1-#2</p>	<p>No          Same comment as provided in response to question 11 for the RA.  <i>{ There can be legitimate reasons for telemeterd data being unavailable. Perhaps it would be more appropriate to change the timing in item 1 from “for up to 24 hours” to “for 12 to 24 hours”. Again, what is wrong with using state estimation data, or other calculated data? These non-compliance levels are not realistic.</i>  <i>If item 2 is intended to be a next level of non-compliance, it should be between 24 to 48 hours.</i>  <i>You do not ask a question about the compliance monitoring process, but we would like to provide comment on that section as well. Section 201 (e) states that the RA will demonstrate compliance thru the self certification process with re-certification on a schedule established by the compliance monitor. We do not agree with the re-certification part of this statement. The compliance monitoring of this standard is not for certification on an entity performing a function.</i>  <i>There is no need for any re-certification in connection with this standard. The self certification process is just a way for an entity to provide information to the compliance monitor that will be validated thru spot reviews etc. The re-certification statement appears in every compliance section in this document. It needs to be removed throughout.}</i></p>

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<p>While this requirement has been dropped from the standard, your suggestions were applied to the same requirement for the RA.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p> <p>Self-certification is an established part of the existing NERC Compliance Enforcement Program. Self-certification is a process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard.</p> <p>Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed on an annual basis although they may be required more often.</p>	
<p>OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>Same comment at Q11.</p> <p>It appears to that there will likely have numerous Level 1 non-compliances unless a threshold is established. Anyone who has been a system operator knows that metering signals fall in and out. If level 1 indicates that every time you lose a signal for metering you are non-compliant, I think it needs reconsideration. The drafting team should consider that state estimators can supply some of this data in the short term.</p>
<p>While this requirement has been dropped from the standard, your suggestions were applied to the same requirement for the RA.</p> <p>Most commenters indicated that the levels of non-compliance should focus on monitoring, and not on the availability of data. The levels of non-compliance were adjusted for the RA’s requirement to shift the focus from data availability to monitoring.</p>	
<p>William Smith Allegheny Pwr #1</p>	<p>No</p> <p>There should not be non-compliance at level 1 or 2 when the RA or TOP stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working.</p>
<p>While this requirement has been dropped from the standard, your suggestions were applied to the same requirement for the RA.</p> <p>Most commenters indicated that the levels of non-compliance should focus on monitoring, and not on the availability of data. The levels of non-compliance were adjusted for the RA’s requirement to shift the focus from data availability to monitoring. The revised RA requirement includes a measure to ensure that the RA has a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>No</p> <p>Non-compliance Levels 1 and 2 need to include a lower limit before the non-compliance level would be in effect. For example, as written, the TOP function would be in Level 1 violation if it misses 1 second of actual telemetered data. This does not seem reasonable. We suggest adding the phrase “and no proper corrective action was taken” to the end of both Levels 1 and 2. Thus:</p> <p>6 Actual telemetered data needed for monitoring system operating limits unavailable, so surrogate value was monitored for up to 24 hours and no proper corrective action was taken</p> <p>4. Actual telemetered data needed for monitoring system operating limits was unavailable, so surrogate data was monitored for up to 48 hours and no proper corrective action was taken</p>

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<p>This requirement and its associated levels of non-compliance have been dropped from the standard. Under the Functional Model, the RA has the principal responsibility for monitoring reliability-related data within its Reliability Authority Area. The IROLs addressed in this standard fall into this category of reliability-related data. Some of the responsibility to monitor the system operating limits and voltage limits for the local network may be delegated to the TOP through written agreement, but those agreements are addressed in the standards being developed for compliance.</p>	
<p>Thomas Pruitt Duke #1 Susan Morris SERC #2  Robert Reed TS (See List)</p>	<p>No 6 Levels 1 and 2 imply that use of substitute data is unacceptable. 6 The only important level of non-compliance listed above is level 4. 6 Loss of telemetry for short periods is an unfortunate but routine matter – with all that telemetry equipment in the field, it cannot be expected that none of it ever have downtime.  4) If this requirement is changed as suggested above, then there should be some type of measures defined to capture the need for a certain level of observe-ability and accuracy of the telemetry data. The TOP should also have a list of identified limits on the SCADA system that is being monitored on a periodic basis. The TOP should also have a list of “RA assigned” Operating Security Limits identified by the RA and instructions on mitigation actions to perform if the OSL is reached and/or violated.</p>
<p>This requirement and its associated levels of non-compliance have been dropped from the standard. Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Stuart Goza TVA #1</p>	<p>No There should be some realistic acceptable period for failed telemetry before Level 1 violation occurs.</p>
<p>This requirement and its associated levels of non-compliance have been dropped from the standard. Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No Please see comments on Question #11  <i>{ Level 1 may require a more stringent time frame than a 24 hour loss of telemetered data. RAs should have the most accurate information at all times. There is no apparent check whether the surrogate value is as accurate as the actual telemetered data. Reliability may be greatly jeopardized if the RA employs inaccurate data for a 24 hour period. We recommend for Level 1 compliance that surrogate values not be relied on for more than 4 hours. This provides incentive to recover from the loss of data well within the operating time frame of the wholesale market 8 hour block schedules. For Level 2 compliance, 24 hours is appropriate. As an alternative, there could be some recognition in the suggested compliance levels for the time of day (&amp; day of week) as to when the data is not available. This system visibility that this information provides is most critical when the system is in danger of a operating limit violation.}</i></p>

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<p>Many commenters indicated that temporary loss of data should not be a non-compliance event. The levels of non-compliance were revised to conform with the changes made to the requirement. The emphasis in the new levels of non-compliance is on ensuring that system operators have the limits and compare real time data against those limits. A penalty could be assessed if an entity didn't have a process or procedure in place to ensure monitoring can continue if automated real time system operating data is unavailable.</p>	
<p>Alan Johnson Mirant #6</p>	<p>No May not be reading this correctly, but it seems unreasonable that if some data is missing during a 24-hour period that the RA is deemed to be non-compliant. Seems like there should be allowance for some sort of tolerance before being deemed non-compliant.</p>
<p>While this requirement has been dropped from this standard, your comments were applied to the requirement for RA monitoring. Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Richard Kafka Pepco #1</p>	<p>No In many cases, state estimator data are an adequate replacement for telemetered data.</p>
<p>While this requirement has been dropped from this standard, your comments were applied to the requirement for RA monitoring. Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Peter Burke ATC #1</p>	<p>No Same as response provided for Question 11. <i>{ Level 1 non-compliance is written "up to 24 hours." This suggests that anything, even a single missed scan, qualifies as non-compliance. As worded there is a significant amount of room for interpretation as to what constitutes non-compliance. If MISO loses the ability to scan one reading from one RTU for a day, this should not be considered a violation. If an RTU is lost for a day, a decision needs to be made as to how critical the data is to reliable operations. If an entire ICCP link is lost, 10 minutes may be too long. That will most likely be a judgement call based on the data supplied via the link that is down and system conditions at the time of the failure (sunny and 65 degrees versus thunderstorms rolling through the system). This needs more work before using it to assign fines for non-compliance.}</i></p>
<p>While this requirement has been dropped from this standard, your comments were applied to the requirement for RA monitoring. Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>No See comment in #11 <i>{Manitoba Hydro agrees with using a set of levels to define non-compliance. However the set of limits defined here may not be appropriate and should be related to the risk on the system. In the event of loss of data, perhaps a lower set</i></p>

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	<i>of limits should be applied till the regular data can be re-established.}</i>
<p>This requirement has been dropped from this standard. The suggestion you made for requiring that there be a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable was adopted for the requirement that addresses RA monitoring. The revised standard does not include penalties for loss of data.</p>	
Lloyd Linke MAPP #2	<p>No</p> <p>In 1 and 2, the words “for more than 3 hours” should be added after the word unavailable. Loss of telemetry for short periods is an unfortunate but fairly routine matter – with all that telemetry equipment in the field, it can’t be expected that none of it ever has down-time.</p> <p>Level #1 should be 48 hours, level #2 should be 72 hours, and level #3 should have a 96 hour requirement. In many instances, 24 hours may be impractical especially with reliance on outside communication providers.</p>
<p>This requirement has been dropped from this standard.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
Kim Warren IMO #2	<p>No</p> <p>Loss of a few telemetered quantities does not constitute an inability of the TOP to perform his “monitoring “(and analysis) functions if the State Estimator remains functional. (In fact State estimated quantities are deemed to be often more accurate than telemetered quantities .) Reporting of loss of actual telemetry should only be required when the TOP can no longer perform these functions. Furthermore, reporting each actual telemetry loss will create too much overhead for the TOP, the Regions and/or NERC.</p> <p>For a loss of the TOPs “monitoring function”, a minimum time standard should be built into this compliance issue similar to “Exceeding an Operating Limit but Not a Reportable Violation” (question 5 &amp; 6). There should be a time allowance for short term failures (i.e. &lt; 30 minutes) of failure before reporting is required.</p>
<p>This requirement has been dropped from this standard.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
Fred Frederick Vectren #3	<p>No</p> <p>At what point does telemetered data being unavailable constitute non-compliance (1 second, 1minute, 1 hour, etc.)?</p>
<p>This requirement has been dropped from this standard.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
Ken Skroback AL Elec Coop #4	<p>No</p> <p>I think that there needs to be some way to accommodate short term data outages such as a loss of a transducer, an RTU failure or a telecom failure without causing non-compliance. Maybe a loss of data up to 24 hours would be compliant while those exceeding 24 hours are not. At some point everyone will have some equipment failures</p>

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<p>This requirement has been dropped from this standard.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>This non-compliance matrix is completely inappropriate and ineffective. What is the scope of the telemetering unavailability required to achieve these levels of non-compliance? Is the goal here to achieve compliance with reliability standards or measure the amount of redundant telemetering equipment? It is clearly possible to maintain reliability absent some telemetering as long as an effective State Estimator is in use. Additionally, how much telemetering must be unavailable in order to be non-compliant: One point, five points, 5,000 points, etc.? Compliance should be measured against how many violations that an area had which were not cleared over a specified period of time. Only the RA should make the determination of how much telemetering is enough to have effective limit management.</p>
<p>This requirement has been dropped from this standard.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p><b>No – Comments with recommendations for alternate levels of non-compliance</b></p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>No</p> <p>Should be revised to state that as long as limits are observable the TOP is compliant.</p>
<p>This requirement has been dropped from this standard.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>If the requirement was changed to the TOP providing real time data, equipment limits, and model updates to their RA as specified by their RA, then the levels of non-compliance could be:</p> <ol style="list-style-type: none"> <li>(1) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for up to 24 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</li> <li>(2) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 24-36 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</li> <li>(3) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 36-48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</li> <li>(4) Actual TOP telemetered data specified is not be provided by the TOP to the</li> </ol>

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	<p>RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period greater than 48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant), or the TOP did not station personnel at the Station or Plant as directed by the RA to provide this data while telemetry was being restored, or the TOP did not provide equipment limits as requested, or The TOP did not provide modeling update information until after the energization of new facilities.</p> <p>Note: the idea is that depending on system conditions, the RA may be able to rely on their previous operational planning analysis (next day analysis) for a day or so. However, if system conditions warrant, the RA should have the authority to direct the TOP to man the station and if the TOP refuses that should be considered a significant infraction.</p> <p>Need to define “surrogate value” and “surrogate data”.</p>
<p>The revised standard includes a requirement that the TOP provide data to its RA. The original requirement for the TOP to monitor system limits has been dropped from this standard.</p> <p>Many commenters objected to the emphasis on availability of data. The revised standard includes a requirement that the RA have a process or procedure in place to ensure monitoring will continue when automated real-time system operating data is unavailable. In the revised standard, the absence of this process or procedure is considered non-compliant behavior.</p>	
<p><b>Comments with a mix of recommendations</b></p>	
<p>Joanne Borrell Ed Stein Ray Morella FirstEnergy #1, 3,6  ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>(1) Operating Security Limits are not usually monitored in real time.</p> <p>(2) There should not be a non-compliance at level 1 or 2 when a Reliability Coordinator (RC) or Transmission Operator (TOP) stations an operator at a substation or plant to monitor operating data if the telecommunications equipment is not working. The existing standard forces a non-compliance whenever the telecommunications equipment is not working.</p> <p>(3) Requirements 201 and 202 are very similar. Requirement 201 applies to Reliability Coordinators. Requirement 202 applies to Transmission Operators. The requirements are duplicative. The standard should require system conditions to be monitored by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing the monitoring if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was to require monitoring of real-time data and comparing the real-time data against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted. The revised standard includes the new term, “Interconnection Reliability Operating Limit” and a definition of this type of system operating limit will be posted for comment when the revised standard is posted.</p> <p>The revised standard makes allowances for the manual collection of real time data. The definition of ‘real time data’ has been modified, and no longer includes the reference to data sampling rates.</p> <p>This duplicate requirement for the TOP has been dropped from this standard. The RA is the only function with responsibility for this requirement.</p>	



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<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>Operating Security Limits are not usually monitored in real time. They are usually fixed values that are determined from operating studies. The only limits that might be monitored in real time are those that are dependent on actual weather conditions. It is not a requirement to determine Operating Security Limits based on weather conditions. Actual Operating Measurements are what need to be monitored in real time and compared to the Operating Security Limit. This standard should be updated to reflect the difference between a limit, a monitored value, and a monitored value that exceeds a limit.</p> <p>The description of Level 1 Non-compliance and Level 2 Non-compliance under ‘Levels of Non-compliance for this Requirement’ should be changed. Level 1 non-compliance should read ‘Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 24 hours’. Level 2 non-compliance should read ‘Actual telemetered data or a surrogate for actual telemetered data needed for monitoring deviations from system operating limits was unavailable for 48 hours’. There is nothing wrong with using a manual reading phoned in from a substitution or using a value calculated from surrounding parameters. A value calculated from surrounding parameters might be better than an incorrect telemetered value. Some State Estimation systems use a value calculated from surrounding parameters instead of the telemetered value for certain circumstances.</p>
<p>In the first draft of this standard, this requirement was poorly stated. The intent was to require monitoring of real-time data and comparing the real-time data against IROLs. The revised standard states this much more clearly. The definition of real time data has been updated and is being posted for comment when the revised standard is posted. The revised standard includes the new term, “Interconnection Reliability Operating Limit” and a definition of this type of system operating limit will be posted for comment when the revised standard is posted.</p> <p>The revised standard makes allowances for the manual collection of real time data. The definition of ‘real time data’ has been modified, and no longer includes the reference to data sampling rates.</p> <p>This duplicate requirement for the TOP has been dropped from this standard. The RA is the only function with responsibility for this requirement.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No</p> <p>Level 4 is the most important metric for this Requirement and we feel that Level 1, 2 and 3 are unnecessary.</p>
<p>This requirement was dropped from this standard. Your suggestion was incorporated into the changes made to the requirement for RA monitoring.</p>	
<p><b>Comments indicating inconsistent use of terminology</b></p>	
<p>Alan Boesch NPPD #1</p>	<p>Yes/No</p> <p>The levels of non-compliance use the term “Actual telemetered data” while the footnote to the measures states that real-time, state estimated or calculated data is acceptable. There is at a minimum confusion with the way these terms are stated if not outright conflict. The standard needs to be consistent between the measurement and level of non-compliance.</p>
<p>While this requirement was dropped from this standard, your suggestion was incorporated into the changes made to the requirement for RA monitoring. In the revised standard, there is a revised definition of ‘real-time data’ and the term ‘real time data’ is used throughout the standard. The footnote is not included in the revised standard.</p>	
<p><b>Other comments</b></p>	
<p>Ed Riley CA ISO #2</p>	<p>The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>

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<p>It is important that entities responsible for compliance understand the ramifications of compliance as well as the standard itself. The standard, therefore, will contain compliance requirements along with the standard itself. This principle is inherent in the development of all new standards.</p>	
<p>Bob Burkard NCMPA1 # 3,4,5 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Francis Halpin BPA Bus Line #5,6 James Stanton Calpine #5 Joe Minkstein PG&amp;E #5 Mike Miller Southern Co #1 Tony Jankowski We-Energies #4 Vern Colbert Dominion #1</p>	<p>Yes</p>

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### 14. Requirement 3 – Do you agree with this requirement and its associated performance/outcome and measure/s?

#### **Original Requirement:**

The Reliability Authority (RA) shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other associated RAs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The RA shall specify when to supply data (based on the RA's hardware and software requirements, and the time needed to do the operational planning analysis.)

The RA shall notify the Compliance Monitor if an RA, BA, IA Generator or TOP does not provide data as requested.

#### **Measure(s):**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

#### **Outcome(s) (100% Compliance):**

The RA shall specify and collect the data it needs [from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Transmission Operators (TOPs) and other RAs] to maintain the models needed to support real time monitoring and reliability analyses. The RA shall maintain a record that shows data requested but not received.

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### Revised Requirement:

The reliability authority shall specify and collect the data it needs to support real-time monitoring, operational planning analyses and real-time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits. The reliability authority shall collect this data from the entities performing functions that have facilities monitored by the reliability authority, and from entities that provide facility status to the reliability authority. This includes specifying and collecting data from the following:

- Generator owners
- Generator operators
- Reliability authorities
- Transmission operators
- Transmission owners

The reliability authority shall specify when to supply data (based on its hardware and software requirements, and the time needed to do its operational planning analyses.)

The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.

### Measure(s)

1. The reliability authority shall have a documented specification for data needed to build and maintain models needed to support real time monitoring, operational planning analyses and real time assessments relative to interconnection reliability operating limits.
  - Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.
  - Specification shall address the data provision process to use when automated real-time system operating data is unavailable.
2. The reliability authority shall distribute its data specification to the entities that have facilities monitored by the reliability authority and to entities that provide facility status to the reliability authority.
3. The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority, or an entity that provides facility status to the reliability authority, does not provide data as specified.
  - The notification shall take place within five business days of discovering that the data is missing.

### Summary Consideration:

This requirement has been revised based on industry comments and a review of the Functional Model. The list of functions that need to provide data to the RA has been revised – the TOP and the Generator Operator have been added to this list, and the BA and IA have been dropped from the list. Many commenters indicated that having the RA 'request' data was troublesome because the RA may not always be aware of system changes. To accommodate this, the language in the requirement was changed so that instead of requesting data, the RA will 'specify' what data it needs. Language was added to clarify that the RAs specification for data is limited to those entities that have facilities monitored by that RA. Based on comments submitted, the "industry accepted format" phrase has been replaced with "mutually agreeable format," and the term, 'technically accurate' was modified to say, 'accurate.'

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The scope of this requirement was expanded to include the collection of data needed to build as well as to maintain system models.

The Outcomes section was redundant and was eliminated.

No – Comments indicating need to better define data	
Joseph Buch Madison #4	No  The “data” that is to be requested is not defined. As part of this standard one should be able to initially define a handful of key data elements that are required. These key elements would include the minimum information required to support reliability analyses. See question 47 for additional comments.
<p>The standard has been revised to state that the RA must ‘specify’ what data it needs and must distribute this specification to the entities that have facilities monitored by that RA.</p> <p>The standard does not include a list of data to be provided, since the data needed by each RA may be unique. Any list would be too specific for some RAs and not specific enough for other RAs. Instead, the revised requirement states that the RA shall specify the data it needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area</p>	
Fred Frederick Vectren #3	No  The RA should utilize existing data models whenever available. Collection of data should be coordinated with other data model building efforts to minimize duplication of efforts.
<p>The standard has been revised to state that the RA must ‘specify’ what data it needs and must distribute this specification to the entities that have facilities monitored by that RA. Hopefully, this will eliminate any duplication of data collection.</p> <p>There is no single standard that addresses data collection. This standard addresses just the data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area.</p>	
Gregory Campoli NY ISO #2	No  The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document. There also needs to be a clear distinction between data for modeling reliability analysis and data for real time system monitoring.
<p>The SDT included the reference to the Compliance Monitor because there didn’t seem to be any other way of connecting the requirements for specifying and providing the data. If the RA doesn’t notify the Compliance Monitor that data hasn’t been provided, how will the Compliance Monitor know that data hasn’t been provided? The SDT will ask the industry for feedback on this recommendation.</p> <p>In the revised standard, the requirement has been re-phrased so that the RA shall develop a specification for data it needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area.</p>	
Raj Rana AEP #1,3,5,6	No  There needs to be an industry minimum specification for the type of data required, similar to Appendix 4B “Electric System Security Data.” This is required to ensure a minimum standard is set for the type and quality of reliability analysis that the RA’s are to perform. Additionally, as worded this requirement is too vague and burdensome to the TOP. Basically, it implies that if the RA requests a piece of information, the TOP is to provide that information regardless of cost or actual benefit to the RA of having the data (though nowhere in this standard is there a requirement for them to explicitly do so). There should be a requirement that the

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data requested meet an industry reasonability standard for being classified as reliability related data. An update of Appendix 4B could accomplish this.

Once the above commnet are addressed, then it is appropriate for the RA to specify and collect the data it needs, within the guidelines set forth in Appendix 4B, to maintian the models needed to support real time monitoring and reliability analysis.

There needs to be a requirement in this standard for the BA, IA, Generator and TOP to provide this data to the RA on an ongoing basis and the associated penaties for them if they do not. What good is it for the RA to specify the data they need if the those who have the data are not required to continually supply it? Yes, this requirement does specify that the RA is to notify the Complinance Monitor if these entities do not provide the data requested. And yes, Requirement #8 requires the TOP to provide data no less then 7 days prior to energization of new facilities. But where is the requirement that says they must continually provide the data?

Additionally, without an industry minimum standard similar in concept to Appendix 4B, how do we resolve the issue where a RA desires individual unit dispatch information but the Generator and BA only desire to provide zonal dispatch data?

Also, the requirement of the RA to “collect the data it needs” is too vague. Also, the requirement of the RA specifying when to supply data is too vague. The data supplied should be data that is mutually agreed upon between the RA and respective party along with the timing of the request. The respective party should not have to obtain the same hardware and software as RA.

The standard has been revised to state that the RA must ‘specify’ what data it needs and must distribute this specification to the entities that have facilities monitored by that RA.

The standard does not include a list of data to be provided, since the data needed by each RA may be unique. Any list would be too specific for some RAs and not specific enough for other RAs. Instead, the revised requirement states that the RA shall specify the data it needs to support real-time monitoring, operational planning analyses and real time assessments of its reliability area.

Under the Functional Model, the RA has ultimate responsibility for the reliability of the interconnected bulk power system. The RA should not need to negotiate to collect the data it needs to support its responsibilities in protecting reliability. There should be some opportunity for the RA and the functions that work with the RA to agree upon an acceptable format for the data. The intent is to provide some room for discussion so that the functions reporting to the RA aren’t held to a stricter standard than is necessary with respect to data format.

The revised standard includes the following language:

- The entity responsible shall provide data to the requesting RA, within the time frame specified, in the mutually agreed upon format.

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<p>Peter Burke ATC #1</p>	<p>No</p> <p>There needs to be a mechanism in place to ensure that the RA is notified when system changes are made. This addresses the problems we've seen with lack of coordination between the people building/updating/etc.. facilities and the people responsible for the reliable operation of the system.</p> <p>However, there is some concern about the documentation required. The amount of documentation needed to track all of the possible changes in data may overwhelm the RA if it oversees a significant portion of the interconnection.</p> <p>What is meant by "it needs" in the statement "The Reliability Authority shall specify and collect the data it needs. . .?" A standard that imposes sanctions must be more specific about what is needed.</p> <p>In the statement, "The RA shall notify the Compliance Monitor. . .," there's no mention of time frame, no specification of how soon after failure the RA must notify the Compliance Monitor.</p> <p>This requirement should apply to Distribution Providers (DPs) in the same way it applies to BAs, Ias, Generators, TOPs, and "associated RAs."</p>
<p>Several commenters indicated the concern that the RA may not be aware of system changes. To address this, the standard was changed so the RA must develop and distribute a data specification document – other requirements in the standard address provision of data according to the data specification. These changes should result in a situation where the RA does not need to contact other functions and request data – the data should be provided in accordance with the data specification.</p> <p>The requirement was revised to indicate that the compliance monitor shall be notified within five business days of recognizing that data is missing.</p> <p>This standard is limited to addressing data needed to support real-time monitoring, operational planning analyses and real time assessments of its reliability area. The DPs do not have any of this data.</p>	
<p><b>Comments indicating need to refocus or add to requirements</b></p>	
<p>Sam Jones ERCOT #2</p> <p>OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>Yes/No</p> <p>The Requirement should be refocused to state that the RA needs to maintain accurate models and run studies to determine limits rather than directing the RA to collect the data it needs. There should be Requirement for the Transmission Owner, Generation Owner, LSE, and TOP to provide the RA with the data it needs for its studies.</p> <p>Under Requirements 6 and 7, minimum times are specified for provision of "monitoring" data provision. However, no similar minimum time line is stated for this Requirement. For consistency, a minimum time should also be stated. This time specification should provide sufficient time for the RA, etc., to perform data base modelling and development and confirmation of limits.</p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>Several commenters addressed timing of data provision and indicated that each RA may have different timing requirements. Accordingly, the standard was changed to give the RA the flexibility to identify its timing requirements as part of its data specification.</p>	
<p>Susan Morris SERC #2</p>	<p>Yes</p> <p>The collection and processing of the data requirements could be a RA data management responsibility. Isn't there a need to develop a requirement to show</p>

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	<p>that the data is used in the analysis? Instead of evaluating the supply of data, shouldn't the focus be on monitoring and assessing transmission reliability?</p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>This standard does include requirements that address monitoring and assessing transmission system reliability.</p>	
<p>Compliance Mangers</p>	<p><u>Proposal</u></p> <p>The RC is required to do "Real Time Monitoring" of data and equipment status that relates to specific, current, System Operating Limits, therefore there should be a measure for this requirement, with sanctions indicated for non-compliance</p> <ol style="list-style-type: none"> <li>Acceptable parameters of monitoring must be defined. On the assumption that the transmission elements that will be monitored have been determined, and the Operating Security Limits have been defined, then:Acceptable update frequency and accuracy of "Real Time Monitoring" of the data and equipment related to the OSL must be defined.</li> <li>What data and equipment will be monitored must be established by the Reliability Coordinator and agreed to by the Transmission Provider.</li> </ol> <p>The Transmission Provider must provide the data and equipment status information as required by the Reliability Coordinator. (Within agreed frequency of update and accuracy of data.)</p>
<p>Monitoring is addressed in another requirement. This requirement addresses just the data specification to ensure that the RA has the data it needs to monitor and assess its system with respect to IROLs. As revised, this standard allows entities to provide data through other than automated systems. Requirements for the RA's equipment are addressed in Certification Standards.</p> <p>The RA has ultimate responsibility for the reliability of the transmission system. The RA does not need to negotiate with Transmission Providers for the data it needs.</p>	
<p><b>Comments indicating need to make changes to improve understanding</b></p>	
<p>Toni Timberman BPA #1</p>	<p>Yes/No</p> <p>In the text of the Requirement, the term "Generators" is not definitive enough to describe who is responsible for providing the "data". A Generator Operator may not have access to the dynamic model, and the Generator Owner may not have access to the real-time data.</p> <p>TOW needs to be added to the text of the requirement as one of the entities responsible for providing data to the RA.</p> <p>The words "Industry Accepted Format" and "technically accurate" should be deleted from the Measures, since an Industry Accepted Format does not exist, and at times Technically Accurate information is not available. There may not be generator test data available, so default data is used in the studies. Maybe "best available data" would be more realistic. Actually, I suggest that the text for measures 1 &amp; 2 be modified to end at 'timeframe', and the rest of the sentence be deleted.</p>



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<p>All of your suggestions were incorporated into the revised standard.</p> <p>The Generator was changed to Generator Owner.</p> <p>The TOW was added to the list of functions that must supply data to the RA.</p> <p>The term, 'industry accepted format' was changed to 'mutually agreeable format'.</p> <p>The term, 'technically accurate' was changed to drop the word, 'technically'.</p>	
Ed Riley CA ISO #2	<p>Yes</p> <p>Wording in the second paragraph of the Requirements should be changed to read "The RA shall specify when the data is to be supplied"</p>
<p>The revised requirement includes a measure that indicates what must be included in the RA's data specification. The details of that measure include a requirement that the RA specify a timeframe for providing data.</p>	
Joanne Borrell Ed Stein Ray Morella FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8, #5– 1, #2 – 2	<p>Yes</p> <p>We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state '----- timeframe, and notation that data be technically accurate and complete'. We would rewrite these measures to state '-----timeframe, and notation that data be accurate and complete'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?</p>
<p>The standard was revised to eliminate the adjective, 'technically' from the standard. There is no difference between technically accurate and accurate.</p>	
Doug Hils Cinergy #1	<p>Yes</p> <p>Defination for technically accurate data needed.</p>
<p>The standard was revised to eliminate the adjective, 'technically' from the standard. There is no difference between technically accurate and accurate.</p>	
Alan Johnson Mirant #6	<p>Yes</p> <p>Note that this "industry accepted format" must be somehow defined by the industry (via either NERC or NAESB as appropriate), and not vary from RA to RA.</p>
<p>Several commenters indicate that there is no single 'industry accepted format' and suggested that this phrase be eliminated from the standard. In the revised standard, the term, 'industry accepted format' was changed to 'mutually agreeable format'.</p>	
<p><b>Yes – Comments indicating need to better define data</b></p>	
Tony Jankowski We-Energies #4	<p>Yes</p> <p>This Requirement should define all data required, not just changes.</p>
<p>Several commenters indicated that this standard should be expanded to address a wider range of data. The requirement was expanded to address all data needed to support real-time monitoring, operational planning analyses and real time assessments of its reliability area.</p>	
Tom Petrich (5) PG&E #1	<p>Yes</p> <p>There needs to be agreement among the various functions on the exact acceptable format and timing for data transfer to void unnecessary duplication of work. The generator function should provide data to the RA through the TOP, instead of to both the RA and the TOP, to avoid unintended inconsistency. Please add "the format and timing for data transfer should be coordinated and agreed to by the impacted parties".</p>

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The revised standard includes the following language:

- The entity responsible shall provide data to the requesting RA, within the time frame specified, in the mutually agreed upon format.

<p>Alan Boesch NPPD #1</p>	<p>Yes/No The standard should state what type of information may be required by the RA. A list similar to that in NERC Operating Policy 4 should be included and the RA could identify what data from this list is required. In addition the RA must make the request with sufficient time for the BA, IA, TOP or other RA to implement the data request.</p>
<p>The standard does not include a list of data to be provided, since the data needed by each RA may be unique. Any list would be too specific for some RAs and not specific enough for other RAs. Instead, the revised requirement states that the RA shall specify the data it needs to support real-time monitoring, operational planning analyses and real time assessments of its reliability area.</p> <p>The standard was changed so the RA must develop and distribute a data specification document. This change should result in a situation where the RA does not need to contact other functions and request data – the data should be provided in accordance with the data specification.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes Manitoba Hydro agrees with the requirement to provide data to the RA. The accuracy of this data is not referenced here. Generally data should be accurate. There are all sorts of reasons why it may not be accurate and a process should be in place to keep improving the data and having a means to identify bad or questionable data.</p>
<p>Having processes in place to identify 'bad data' is beyond the scope of this standard.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>Yes However, we suggest the requirement be more general stating “..data it needs from all entities using the transmission system to maintain the ..”, deleting the list of some but not all functions.</p>
<p>The requirement was revised to indicate the RA may request data from any of the functions with facilities monitored by the RA.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Yes The data the RA needs to collect in order to maintain models should be determined through some collaborative process involving the interested parties. The determination of what data to collect should not be based on subjective, arbitrary requests but rather on defensible criteria which are consistent across the industry.  Confidentiality of third party market sensitive information may be an issue which needs to be addressed.</p>

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<p>Under the Functional Model, the RA has ultimate responsibility for the reliability of the interconnected bulk power system. The RA should not need to negotiate to collect the data it needs to support its responsibilities in protecting reliability. There should be some opportunity for the RA and the functions that work with the RA to agree upon an acceptable format for the data. The intent is to provide some room for discussion so that the functions reporting to the RA aren't held to a stricter standard than is necessary with respect to data format.</p> <p>The revised standard includes the following language:</p> <ul style="list-style-type: none"> <li>The entity responsible shall provide data to the requesting RA, within the time frame specified, in the mutually agreed upon format.</li> </ul> <p>The RA is expected to sign a confidentiality agreement as part of the RA Certification process.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes</p> <p>However, as stated in an earlier question, this assumes that the initial data is obtained via requirements for certification. We believe that the requirement for specification of data should not depend on if it is initial data, or updates. However, the RA should have a process in place for collecting that data as new facilities come into service or change.</p> <p>The outcome seems to be just a restatement of the requirements. It does not add anything to the standard.</p>
<p>Several commenters indicated that this standard should be expanded to address a wider range of data. The requirement was expanded to address all data needed to support real-time monitoring, operational planning analyses and real time assessments of its reliability area.</p> <p>The Outcomes section of all standards has been removed for the reason you stated – it was redundant.</p>	
<p>Vern Colbert Dominion #1</p>	<p>Yes</p> <p>Collection of data should be an RA responsibility</p>
<p>Agreed. The duplicate requirement for the TOP was dropped from the standard.</p>	
<p>Thomas Pruitt Duke #1 Robert Reed TS (See List)</p>	<p>Yes</p> <p>The collection and processing of the data requirements could be a RA data management responsibility.</p>
<p>Agreed. This is supported in the standard.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes</p> <p>In general we agree with the requirement. However, it is up to the RA when and how the data will be collected and determined to be reliable. The primary issue we have with this requirement is the need to maintain a record of requested data and an identification of data not delivered.</p>
<p>The language in the requirement was changed so the RA does not 'request' data – instead the RA produces and distributes a data specification. With this change, the RA will need to keep a record of its data specification, not its data requests. The RA will need to notify the Compliance Monitor so the Compliance Monitor can address non-compliance with entities that don't provide the needed data.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>Yes</p> <p>A form needs to be developed to allow the different authorities to submit this data.</p>

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There are many different methods of collecting data – some RAs collect data electronically. Having a form would, in some cases, require more work than is necessary. This suggested change was not incorporated into the revised standard.

<p>Albert M. DiCaprio MAAC #2          Bob Burkard NCMPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          James Stanton Calpine #5          Joe Minkstein PG&amp;E #5          John Blazekovich Exelon #1,3,5,6          Karl Kohlrus CWL&amp;P #5          Kim Warren IMO #2          Lee Westbrook Oncor #1          Lee Xanthakos SCE&amp;G #1          Lloyd Linke MAPP #2          Mike Miller Southern Co #1          Richard Kafka Pepco #1          Richard Schwarz PNSC #2          Roman Carter So Co Gen 3,5,6 (6 members)          Stuart Goza TVA #1          Todd Lucas (6?) Southern Co #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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**15. Requirement 3 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance:</b></p> <ol style="list-style-type: none"> <li>1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )</li> <li>2. Data was not requested or there was no record of specification</li> <li>3. Not Applicable</li> <li>4. Not Applicable</li> </ol>
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<p><b>Revised Levels of Non-compliance:</b></p> <ol style="list-style-type: none"> <li>1. Data specification incomplete (missing either list of required data, a mutually agreeable format, timeframe for providing data or a data provision process to use when automated real-time system operating data is unavailable)</li> <li>2. No data specification or the specification was not distributed to the entities that have facilities monitored by the reliability authority and the entities that provide the reliability authority with facility status</li> <li>3. Not applicable</li> <li>4. Not applicable</li> </ol>
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**Summary Consideration:**

The levels of non-compliance were revised to conform with the changes made to the requirement and its measures.

<b>No – Comments about inappropriate levels of non-compliance</b>	
Lloyd Linke MAPP #2	No Level #1 and #2 non-compliance should be level #3 and level #4 non-compliance. Level #1 and level #2 should be changed to “Not Applicable”.
The financial penalties associated with non-compliance can be quite severe. Not having a data specification is not likely to have as severe an impact on the reliability of the interconnected bulk electric system as exceeding an IROL for a time period greater than $T_v$ .	
Joseph Buch Madison #4	No Without certain data the RA cannot perform one of it’s primary functions, that of reliability analysis. I would support a level 4 non-compliance if the RA does not request these key items.
The financial penalties associated with non-compliance can be quite severe. Not having a data specification is not likely to have as severe an impact on the reliability of the interconnected bulk electric system as exceeding an IROL for a time period greater than $T_v$ .	
FRCC 6-#1, 4-#2, 1-#2	No The 2 <sup>nd</sup> level is confusing. If data was not requested, perhaps it was not needed. It would seem to go back to what the specification is requiring to be provided. Perhaps a more important level would be if the RA requested data, did not receive it, and did not attempt any further to get it. In the 2 <sup>nd</sup> level statement it says “or there was no record of specification”. Isn’t that essentially the same as the 1 <sup>st</sup>

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	<p>level?</p> <p>Again, you did not ask about the compliance monitoring section. Please see comment stated earlier about self-certification and re-certification.</p>
<p>The requirement was revised to shift from having the RA 'request' data to having the RA 'specify' and distribute a data specification. Commenters indicated numerous logistical problems associated with having the RA request data on a case-by-case basis.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No</p> <p>Should this be a yes – no answer? What if a party was required to provide 10 parameters and provided 9 of the 10. The current levels would have this be a violation. Should there be two interim levels (3 and 4: over or under 85% of required data for example) which provide a bit of leniency? As written, the compliance levels don't agree with this portion of the standard they are too vague</p>
<p>There is another requirement that addresses the provision of data. This requirement addresses whether the RA identified what data it needed, and communicated those requirements to the entities that need to provide the data.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>No</p> <p>Non-compliance Level 1 states "data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete)". It is not clear why the RA should be held in non-compliance for "technically inaccurate or incomplete" data submitted by other functions. We suggest deleting "or some data technically inaccurate or incomplete".</p>
<p>The RA produces the data specification – if the data specification is incomplete, then the RA should be sanctioned. The original levels of non-compliance did not state this clearly enough.</p> <p>The non-compliance has been revised and include the following language:</p> <ul style="list-style-type: none"> <li>• Data specification(s) was not complete (list of required data, a mutually agreeable format, and timeframe for providing data)</li> </ul>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>The phrase "some data technically inaccurate or incomplete" in level 1 would not apply to the RA. It would appear from the phrase "notation" in the "Measure(s)" section that level 1 compliance would hinge on whether or not the RA notified the supplier that the data should be accurate and complete, since that is the only part they have control over.</p> <p>This requirement penalizes the RA for not asking for data that it may not know it needs. For example, if a TOP energizes a new station, how is the RA supposed to know that the station exists? If the RA doesn't know, it can't request data and can't tell that it's missing. The RAs do need a standardized way of requesting and receiving updates to allow them to maintain their models in a timely manner. Not sure the penalties as defined get us there.</p>
<p>The RA produces the data specification – if the data specification is incomplete, then the RA should be sanctioned. The original levels of non-compliance did not state this clearly enough.</p> <p>Several commenters noted, as you did, that the RA may not know about system changes that result in the need for data. The requirement was revised so the RA needs to develop and distribute a data specification, rather than individual data requests.</p>	
<p>Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No</p> <p>Please see the first paragraph in our comment to Q14 above.</p> <p><i>{The Requirement should be refocused to state that the RA needs to maintain accurate models and run studies to determine limits rather than directing the RA to collect the data it needs. There should be Requirement for the Transmission Owner, Generation Owner,LSE, and TOP to provide the RA with the data it needs</i></p>

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	<p><i>for its studies.}</i></p> <p>The RA typically has no control of whether the data is provided, but may have prudent and acceptable measures in place which require the data.</p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>The standard was revised so the RA needs to develop and distribute a data specification, rather than individual data requests. Corresponding changes were made to other requirements, to ensure that data is provided 'as specified by the RA' rather than 'as requested by the RA'.</p>	
<p><b>No – Comments indicating non-compliance doesn't address intent of requirement</b></p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>There is not compliance level measuring what the RA actually does with the data. Also, the RA should only be measured on things they can affect. For example, would it be the RA's fault if on of its TOPs submitted data that was technically inaccurate or incomplete?</p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>The standard was revised so the RA needs to develop and distribute a data specification, rather than individual data requests. Corresponding changes were made to other requirements, to ensure that data is provided 'as specified by the RA' rather than 'as requested by the RA'.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No Regardless of format, either the RA receives the specified data or not.</p>
<p>The data needs to be provided in time for use, and needs to be provided in a format that the RA can use.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No Regardless of format, either the RA receives the data specified, or it does not. Shouldn't the RA show that the data is being used in the analysis?</p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>There are other requirements in the standard that address things such as monitoring and assessing the status of the system with respect to IROLs.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No The compliance levels do not meet the intent of the requirement. The levels of compliance should focus on the RA maintenance of a valid system model representation and the collection of real time data.</p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul>	
<p>Thomas Pruitt Duke #1</p>	<p>No These levels of compliance need additional work. For example, the RA could incur a level 1 violation if it requested only a single data item (of 1000+ items) incorrectly. Higher levels of non-compliance should indicate that an SOL has been misidentified or violated.</p>

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<p>The standard was revised so the RA needs to develop and distribute a data specification, rather than individual data requests. Corresponding changes were made to other requirements, to ensure that data is provided 'as specified by the RA' rather than 'as requested by the RA'.</p> <p>There are other requirements in the standard that address IROL identification and exceeding an IROL.</p>	
<p><b>Comments about duplicate requirements for RA and TOP</b></p>	
<p>Joanne Borrell Ray Morella Ed Stein FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8, #5 – 1, #2 – 2</p>	<p>No</p> <p>Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.</p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>Many commenters felt as you do, that this requirement should be assigned either to the RA or to the TOP, but not to both. In the revised standard, this requirement is assigned only to the RA. Under the Functional Model, this is an RA responsibility.</p>	
<p><b>No – Other Comments</b></p>	
<p>Ed Riley CA ISO #2</p>	<p>No</p> <p>The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p>It is important that entities responsible for compliance understand the ramifications of compliance as well as the standard itself. The standard, therefore, will contain compliance requirements along with the standard itself. This principle is inherent in the development of all new standards.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>See above</p> <p><i>{ In general we agree with the requirement. However, it is up to the RA when and how the data will be collected and determined to be reliable. The primary issue we have with this requirement is the need to maintain a record of requested data and an identification of data not delivered. }</i></p>
<p>The language in the requirement was changed so the RA does not 'request' data – instead the RA produces and distributes a data specification. With this change, the RA will need to keep a record of its data specification, not its data requests. The RA will need to notify the Compliance Monitor so the Compliance Monitor can address non-compliance with entities that don't provide the needed data.</p>	
<p><b>Suggestions to improve wording</b></p>	
<p>Toni Timberman BPA #1</p>	<p>Yes/No</p> <p>Re-word #1 to remove "Industry accepted format" and "technically inaccurate". Very often the initial data specification will include what is perceived as necessary at the time, and later additional data will be requested. I don't think a data request from the RA could ever be considered 'complete', if that means that every bit of information has been specified that ever could possibly be needed. # 2 seems ok.</p>
<p>Your suggested revisions were adopted and are reflected in the revised standard.</p> <p>The language in the requirement was also changed to indicate that the RA produces and distributes a data specification rather than producing individual data requests. This should allow the RA to indicate they types of data it needs, without having to specify every unique data point.</p>	



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John Blazekovich Exelon #1,3,5,6	Yes Level 2 “specification” needs to be clarified, is it referring to when, what or both?
<p>The revised standard was written more clearly. Under the revised standard, the RA has to produce a data specification that includes at least three things – a list of required data, a mutually agreeable format, and a timeframe for providing data. The word, ‘specification’ is referring to the data specification.</p>	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5	Yes See previous comment on the term “industry accepted format”. We also felt that compliance monitoring doesn’t belong in the requirement section of this document but may reside in another document pertaining to compliance.
<p>There were many commenters who did not agree with the use of the term, ‘industry accepted format’ and this term is not used in the revised standard. In the revised standard, the term, ‘mutually agreeable format’ is used.</p> <p>The SDT included the reference to the Compliance Monitor because there didn’t seem to be any other way of connecting the requirements for specifying and providing the data. If the RA doesn’t notify the Compliance Monitor that data hasn’t been provided, how will the Compliance Monitor know that data hasn’t been provided? The SDT will ask the industry for feedback on your recommendation.</p>	
Gerald Rheault Manitoba #1,3,5,6	Yes Manitoba Hydro believes that the industry accepted format should be more clearly defined in some Standard to ensure minimum acceptable level of quality.
<p>There were many commenters who did not agree with the use of the term, ‘industry accepted format’ and this term is not used in the revised standard. In the revised standard, the term, ‘mutually agreeable format’ is used.</p>	
David Kiguel Hydro One #1	Yes See previous comment on the term “industry accepted format”. <i>{ . . .”Industry Accepted Format” must not be overly perscitive and must not preclude mutually agreed upon data exchange methods between adjoining areas. Also how is it proposed to handle “proprietary data”?}</i> We also felt that compliance monitoring doesn’t belong in the requirement section of this document but may reside in another document pertaining to compliance.
<p>There were many commenters who did not agree with the use of the term, ‘industry accepted format’ and this term is not used in the revised standard. In the revised standard, the term, ‘mutually agreeable format’ is used.</p> <p>The SDT included the reference to the Compliance Monitor because there didn’t seem to be any other way of connecting the requirements for specifying and providing the data. If the RA doesn’t notify the Compliance Monitor that data hasn’t been provided, how will the Compliance Monitor know that data hasn’t been provided? The SDT will ask the industry for feedback on your recommendation.</p>	
<b>Yes – Other Comments</b>	
Alan Boesch NPPD #1	Yes There is no compliance measure to track the RA’s reporting data that was requested but not received.
<p>Agreed. The SDT felt that if the RA didn’t feel the missing data was important enough to notify the Compliance Monitor, then no sanction should be applied.</p>	
Albert M. DiCaprio MAAC #2	The requirements for computing limits comes from the SAR on Facility Ratings et al. This Standard focuses on response and on Model maintenance (in real-time environment)
<p>Agreed.</p>	
Darrel Richardson Illinois Power #1, 3	Yes However, this only addresses non-compliance on the part of the RA. There

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	should be a similar non-compliance penalty that would apply to those to whom the request is made. Requirements 6, 7, 8 and 9 do not parallel entities responsibility to provide information on a day-to-day basis.
There are corresponding requirements in this standard that require entities to supply the data as specified by the RA.	
Roman Carter So Co Gen 3,5,6 (6 members)	Yes Is there a standard or requirement for the TOP, BA, or IA to provide this data to the RA so that the RA is not captive. There needs to be some compliance requirement on those entities to provide the data (Maybe a criteria requirement in the certification SARs).
There are corresponding requirements in this standard that require entities to supply the data as specified by the RA.	
Alan Johnson Mirant #6 Bob Burkard NCMPA1 # 3,4,5 Charles Yeung Reliant Energy #6 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 Fred Frederick Vectren #3 George Bartlett Entergy Svcs 1 James Stanton Calpine #5 Joe Minkstein PG&E #5 Karl Kohlrus CWL&P #5 Kim Warren IMO #2 Mike Miller Southern Co #1 Raj Rana AEP #1,3,5,6 Richard Kafka Pepco #1 Richard Schwarz PNSC #2 Stuart Goza TVA #1 Tony Jankowski We-Energies #4 Vern Colbert Dominion #1 William Smith Allegheny Pwr #1	Yes

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**16. Requirement 4 – Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Requirement 4:**  
 The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators, Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.<sup>1</sup>

The TOP shall specify when to supply data (based on the TOP’s hardware and software requirements, and the time needed to do the operational planning analysis.)

The TOP shall notify the Compliance Monitor if an RA, BA, IA, Generator or TOP does not provide data as requested.

**Measures:**

1. Documented specification for data needed to implement changes to existing system models (Specification shall include industry-accepted format, timeframe, and notation that data be technically accurate and complete.)
2. Documented specification for data needed to implement changes for real time monitoring (Specification shall include industry accepted format, timeframe, and notation that data be technically accurate and complete.)
3. Record of correspondence requesting new data needed (for monitoring and reliability analyses) with identification of data not received.

**Outcome(s) (100% Compliance):**  
 The TOP shall specify and collect the data it needs [from its associated Balancing Authorities (BAs, Interchange Authorities (IAs), Generators, TOPs and Reliability Authorities (RAs)] to maintain the models needed to support real time monitoring and reliability analyses. The TOP shall maintain a record that shows data requested but not received.

**Revised Requirement: None**

**Summary Consideration:**

Several commenters indicated that this requirement should be removed or adjusted. Under the Functional Model, the RA has the principal responsibility for monitoring reliability-related data within its Reliability Authority Area. The IROLs addressed in this standard fall into this category of reliability-related data. Several commenters indicated a need for a requirement for TOPs to analyze the subset of the transmission system under their control to see instances where IROLs may be approached or exceeded. The system operating limits monitored by the TOP are not IROLs and are outside the scope of this standard. Because so many commenters indicated a desire for a requirement for the TOP, the SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP’s requirement to analyze its portion of the transmission system.

<b>No – Comments indicating requirement is inappropriate for TOP</b>	
Ken Skroback AL Elec Coop #4	No These assumptions work in the new NERC model but don’t apply to a small utility (G & T) that is not separated and serves as its own control area. Since non separated utilities are prevented from receiving data from RA’s, some of these studies are conducted by the RA using data provided by us to them. We currently don’t receive data from other entities, although we provide data to them, and yet our study needs are being met. Since we have no current need for this data, we have no specifications and we have no record of correspondence. According to these measures we would be level 2 non-compliant, yet our study needs are met.

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	I would like a statement in all three measures that states “as required” or “if needed”.
This requirement was dropped from this standard.	
Alan Johnson Mirant #6	No Consistent with the Functional Model, shouldn't the TOP request and receive the necessary data from the RA. It seems as if data requests are flowing in too many directions, which can result in models operating off of different data sets. Also, note that this “industry accepted format” must be somehow defined by the industry (via either NERC or NAESB as appropriate), and not vary from RA to RA.
The Functional Model doesn't specifically identify how the TOP should acquire the data it needs. Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs.	
Peter Burke ATC #1	No My understanding of the future relationship between RA and TOP may be incorrect (I think of the MISO as the RA and ATC as the TOP). However, I think that a TOP should not and will not span multiple RAs. In addition, the RA is given the ultimate responsibility for maintaining system security. Because of these reasons, the TOP should not be getting data from BA, IA, Generator or other TOPs. Rather, the TOP should be getting the data from the RA. So, the requirement should instead enforce that the TOP maintains an accounting of the data it receives from the RA. The majority of the data required by the TOP will be supplied by project/construction/system protection personnel from within the TOP organization unless the TOP is responsible for operation of other transmission systems. (ATC operating ALTW for example) Will they be required to document internal correspondence required to get the data needed for monitoring? The reason for disagreeing with the requirement is that there's no incentive for the people who know about the changes to inform the TOP unless they work for the same company. If a neighboring utility adds equipment that impacts a different TOP, how does the TOP know this is happening and how does the TOP incent the other company to let the TOP know ahead of time? The opening statement refers to “associated TOPs” but nowhere defines the difference between an associated TOP and any other TOP. This requirement should apply to Distribution Providers (DPs) in the same way it applies to BAs, Ias, Generators, RAs, and “associated TOPs.”
Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs.	
Albert M. DiCaprio MAAC #2	No See response to #9 <i>{ In the framework of the Functional Model, the TOP in its role as TOP does not have the responsibility for doing system analysis. To the extent that the TOP does local analysis that information must come from the RA (unless the TOP has its own agreements to access that data.)</i>
Agreed. This requirement was dropped from this standard. Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs.	

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<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No In requirement 3, the RA has already determined what data it needs for reliability analyses and system monitoring. It appears to be redundant to have the TOP do the same thing. Would it be more appropriate for the TOP to have a requirement to provide the requested data to the RA and then be measured in how they perform that?</p>
<p>Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs. This requirement was dropped from this standard. There is another requirement in the revised standard that requires the TOP to provide the specified data to its RA.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No Suggest measuring the TOP non-compliance at gathering and providing the data to the RA, rather than a redundant requirement for the TOP to collect the data.</p>
<p>This requirement was dropped from this standard. There is another requirement in the revised standard that requires the TOP to provide the specified data to its RA.</p>	
<p>Sam Jones ERCOT #2  OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No Same comments as for #14 above, but with focus on TOP. Also, the TOP does not need to collect any information from the IA. The IA has next-hour bilateral and market interchange information, but it's not of any use to the TOP.  <i>{The Requirement should be refocused to state that the RA needs to maintain accurate models and run studies to determine limits rather than directing the RA to collect the data it needs. There should be Requirement for the Transmission Owner, Generation Owner, LSE, and TOP to provide the RA with the data it needs for its studies.}</i>  Under Requirements 6 and 7, minimum times are specified for provision of "monitoring" data provision. However, no similar minimum time line is stated for this Requirement. For consistency, a minimum time should also be stated. This time specification should provide sufficient time for the RA, etc., to perform database modelling and development/confirmation of limits.</p>
<p>This requirement was dropped from this standard.</p>	
<p>Richard Kafka Pepco #1</p>	<p>No RA builds and maintains models</p>
<p>Agreed. Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement for TOPs was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs .</p>	
<p>Vern Colbert Dominion #1</p>	<p>No TOP is not required to gather and provide data to the RA.</p>
<p>The Functional Model does require that the TOP provide facility data to the RA.</p>	
<p>No – Comments indicating requirement needs more details</p>	
<p>Tony Jankowski We-Energies #4</p>	<p>No This Requirement should define all data required, not just changes.</p>

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<p>This requirement was dropped from this standard – however your comment was applied to the changes made to the same requirement for the RA. The revised RA requirement addresses data to support real time monitoring, operational planning analyses and real time assessments of the RAs reliability area.</p>	
<p>Alan Boesch NPPD #1</p>	<p>Yes/No The standard should state what type of information may be required by the TOP. A list similar to that in NERC Operating Policy 4 should be included and the TOP could identify what data from this list is required. In addition the TOP must make the request with sufficient time for the BA, IA, other TOP or RA to implement the data request.</p>
<p>Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No Comments: Unlike our position on Requirement #3, we support the vagueness of this requirement for the TOP. However, it needs to be reworded such as not to place a burden on the data providers. The data required by the TOP from the Generators will be specified in interconnection agreements between the TOP and Generator. These agreements are individually negotiated by each party, hence the Generator has the ability to minimize the burden of the data request and verify the need for the data via negotiations. Hence the support for keeping this requirement vague so as not to dictate the content of interconnection agreements. There may be an opportunity for an industry standard for the type of data to be provided by the BA and RA to the TOP, similar to Appendix 4B. This would help ensure that a TOP is only receiving data it really needs.  Additionally, without an industry minimum standard similar in concept to Appendix 4B, how do we resolve the issue where a TOP desires individual unit dispatch information but the Generator and BA only desire to provide zonal dispatch data?  Also, the requirement of the TOP to "collect the data it needs" is too vague. Also, the requirement of the TOP specifying when to supply data is too vague. The data supplied should be data that is mutually agreed upon between the TOP and respective party along with the timing of the request. The respective party should not have to obtain the same hardware and software as TOP.</p>
<p>Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs.</p>	
<p>Joseph Buch Madison #4</p>	<p>No See comments on question 14. <i>{ The "data" that is to be requested is not defined. As part of this standard one should be able to initially define a handful of key data elements that are required. These key elements would include the minimum information required to support reliability analyses. See question 47 for additional comments. }</i></p>
<p>Because this standard addresses monitoring and comparing the transmission system to the subset of system operating limits (IROLs) that are under the authority of the RA, this requirement was dropped from this standard. Since the TOP doesn't monitor IROLs, the TOP doesn't need to collect the data needed to compare system parameters to the IROLs.  This standard does not identify what data must be provided – since this may vary from RA to RA.</p>	
<p>James Stanton Calpine #5</p>	<p>No The TOP should collect generator data from the RA.</p>
<p>Agreed – however, the standard was revised and this requirement was eliminated.</p>	

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<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>I recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state ‘----- timeframe, and notation that data be technically accurate and complete’. I would rewrite these measures to state ‘-----timeframe, and notation that data be accurate and complete’.</p> <p>What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?</p>
<p>This requirement was dropped from this standard. Your recommended changes were applied to the revisions made to the same requirement for the RA. The phrase, ‘technically accurate’ was revised to say, ‘accurate’.</p>	
<p>Compliance Managers</p>	<p><u>Proposal</u></p> <p>The TOP is required to provide the RC the data and equipment status that relates to specific, current, System Operating Limits, at a pre-determined frequency of update, and accuracy of data. Therefore there should be a measure for this requirement, with sanctions indicated for non-compliance.</p>
<p>The standard was revised to add a requirement that the TOP provide data to its RA.</p>	
<p><b>Yes – Comments with suggestions for word changes</b></p>	
<p>Joanne Borrell Ed Stein Ray Morella FirstEnergy #1, 3,6</p>	<p>Yes</p> <p>We recommend making one change to Measures 1 and 2. Currently Measures 1 and 2 state ‘----- timeframe, and notation that data be technically accurate and complete’. I would rewrite these measures to state ‘-----timeframe, and notation that data be accurate and complete’.</p>
<p>This requirement was dropped from this standard. Your recommended changes were applied to the revisions made to the same requirement for the RA. The phrase, ‘technically accurate’ was revised to say, ‘accurate’.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes</p> <p>In the text of the Requirement, the term “Generators” is not definitive enough to describe who is responsible for providing the “data”. A Generator Operator may not have access to the dynamic model, and the Generator Owner may not have access to the real-time data.</p> <p>TOW needs to be added to the text of the requirement as one of the entities responsible for providing data to the TOP.</p> <p>The words “Industry Accepted Format” and “technically accurate” should be deleted from the Measures, since an Industry Accepted Format does not exist, and at times Technically Accurate information is not available. There may not be generator test data available, so default data is used in the studies. Maybe “best available data” would be more realistic. Actually, I suggest that the text for measures 1 &amp; 2 be modified to end at ‘timeframe’, and the rest of the sentence be deleted.</p>
<p>This requirement was dropped from this standard. Your recommended changes were applied to the revisions made to the same requirement for the RA. The phrase, ‘industry accepted format’ was revised to ‘mutually acceptable format’ and the phrase, ‘technically accurate’ was revised to say, ‘accurate’. TOW was added to the list of functions required to provide data to the RA.</p>	
<p><b>Yes – Other comments</b></p>	
<p>Mike Miller Southern Co #1</p>	<p>Yes</p> <p>coordination should be required so that TOP or RA doesn’t fall out of step</p>

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<p>This requirement has been dropped from this standard. The revised standard includes a requirement that the TOP provide data to its RA, but there are no requirements for the RA to provide data to its TOPs. This standard addresses data needed to monitor the portion of the system that is under the control of the RA, so collection of data needed by the TOP to monitor local network integrity is beyond the scope of this standard.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes Data coordination between the RA &amp; TOP should be required also.</p>
<p>This requirement has been dropped from this standard. The revised standard includes a requirement that the TOP provide data to its RA, but there are no requirements for the RA to provide data to its TOPs. This standard addresses data needed to monitor the portion of the system that is under the control of the RA, so collection of data needed by the TOP to monitor local network integrity is beyond the scope of this standard.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>Yes Assuming data confidentiality will be addressed in future documents.</p>
<p>This requirement has been dropped from this standard. The certification requirements for the RA will require signing a confidentiality agreement.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes Same comments as 14 and 15 <i>{ In general we agree with the requirement. However, it is up to the RA when and how the data will be collected and determined to be reliable. The primary issue we have with this requirement is the need to maintain a record of requested data and an identification of data not delivered.}</i></p>
<p>This requirement was dropped from this standard. The language in the same requirement for the RA was changed so the RA does not ‘request’ data – instead the RA produces and distributes a data specification. With this change, the RA will need to keep a record of its data specification, not its data requests. The RA will need to notify the Compliance Monitor so the Compliance Monitor can address non-compliance with entities that don’t provide the needed data.</p>	
<p><b>Yes – suggestions to change wording of requirements</b></p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>Yes There needs to be agreement among the various functions on the exact acceptable format and timing for data transfer to avoid unnecessary duplication of work. The generator function should provide data to the RA through the TOP, instead of to both the RA and the TOP, to avoid unintended inconsistency. Please add “the format and timing for data transfer should be coordinated and agreed to by the impacted parties”.</p>
<p>This requirement was dropped from this standard. The concept of having a collaborative process for identifying what information is required or for identifying the time frame for providing data was not supported in making revisions to the same requirement for the RA. The concept of having a mutually agreed upon format was adopted in is reflected in the revised requirements. Under the Functional Model the RA has ultimate responsibility for reliability – placing restrictions on the RAs ability to obtain data it needs to monitor and assess the system does not seem reasonable.  Under the Functional Model the RA collects facility data from the Generator; Load-Serving Entity; Transmission Owner and Operator; Distribution Provider functions.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>Yes/No The reference to notification of Compliance Monitor should not be specific to the standard and should be centralized in a compliance document. There also needs to be a clear distinction between data for modeling reliability analysis and for real time monitoring.</p>



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<p>The SDT included the reference to the Compliance Monitor because there didn't seem to be any other way of connecting the requirements for specifying and providing the data. If the RA doesn't notify the Compliance Monitor that data hasn't been provided, how will the Compliance Monitor know that data hasn't been provided? The SDT will ask the industry for feedback on your suggestion.</p> <p>The revised requirement indicates the RA must specify what data it needs – the data can be to support real time monitoring, operational planning analyses and real time assessments of its reliability area.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes</p> <p>same comment as in #14 but for TOP.</p> <p><i>{ Manitoba Hydro agrees with the requirement to provide data to the RA. The accuracy of this data is not referenced here. Generally data should be accurate. There are all sorts of reasons why it may not be accurate and a process should be in place to keep improving the data and having a means to identify bad or questionable data. }</i></p>
<p>Having a process to identify bad data is outside the scope of this standard.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>Yes</p> <p>However, we suggest the requirement be more general stating “..data it needs from all entities using the transmission system to maintain the ..”, deleting the list of some but not all functions.</p>
<p>This requirement was dropped from this standard – however your comments were applied, in concept, to the revisions made to the same requirement for the RA.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Yes</p> <p>A qualified YES: The determination of required information should not be done unilaterally by the TOP as this language implies. It should be determined through a collaborative process, and should protect market sensitive information to the greatest extent possible while still maintaining a reliable system.</p>
<p>This requirement was dropped from this standard. The concept of having a collaborative process for identifying what information is required was not supported in making revisions to the same requirement for the RA. Under the Functional Model the RA has ultimate responsibility for reliability – placing restrictions on the RAs ability to obtain data it needs to monitor and assess the system does not seem reasonable.</p>	
<p><b>Yes – Add form for data submission</b></p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>Yes</p> <p>A form needs to be developed to allow the different authorities to submit this data.</p>
<p>This requirement was dropped from this standard. The concept of developing a standard form for data submission was not applied to the same requirement for the RA because each RA may collect data using whatever means practical for that RA. Some RAs collect data electronically – requiring the use of a new form would add complexity that wouldn't necessarily improve reliability.</p>	
<p>David Kiguel Hydro One #1</p>	<p>Yes</p> <p>A form needs to be developed to allow the different authorities to submit this data. Please see our comments under item # 44 (Regional and Interconnection Differences).</p> <p><i>{ In general we agree with the requirement. However, it is up to the RA when and how the data will be collected and determined to be reliable. The primary issue we have with this requirement is the need to maintain a record of requested data and an identification of data not delivered. }</i></p> <p><i>{ There are differences in some Areas. For example, in Ontario the IMO is solely responsible to determine operating limits and to direct the operation of the IMO-Controlled Grid within these limits. The Transmission owners/operators operate</i></p>

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	<p><i>their respective systems under the IMO's direction. They only provide the IMO with equipment ratings which the IMO must respect. The transmission operators do not determine operating limits or monitor/report their compliance.}</i></p>
<p>This requirement was dropped from this standard. The concept of developing a standard form for data submission was not applied to the same requirement for the RA because each RA may collect data using whatever means practical for that RA. Some RAs collect data electronically – requiring the use of a new form would add complexity that wouldn't necessarily improve reliability.</p> <p>This requirement was dropped from this standard. The language in the same requirement for the RA was changed so the RA does not 'request' data – instead the RA produces and distributes a data specification. With this change, the RA will need to keep a record of its data specification, not its data requests. The RA will need to notify the Compliance Monitor so the Compliance Monitor can address non-compliance with entities that don't provide the needed data.</p> <p>The revised standard conforms with the description you have provided for the IMO's operations.</p>	
<p>Bob Burkard NCMPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          Doug Hils Cinergy #1          Ed Riley CA ISO #2          Fred Frederick Vectren #3          Joe Minkstein PG&amp;E #5          Karl Kohlrus CWL&amp;P #5          Kim Warren IMO #2          Lee Westbrook Oncor #1          Lee Xanthakos SCE&amp;G #1          Lloyd Linke MAPP #2          Roman Carter So Co Gen 3,5,6 (6 members)          Stuart Goza TVA #1          Thomas Pruitt Duke #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>

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**17. Requirement 4 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance:</b></p> <ol style="list-style-type: none"> <li>1. Data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete )</li> <li>2. Data was not requested <b>OR</b> there was no record of specification</li> <li>3. Not Applicable</li> <li>4. Not Applicable</li> </ol>
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<p><b>Revised Levels of Non-compliance: None</b></p>
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**Summary Consideration:**

Several commenters indicated that this requirement should be removed or adjusted. Under the Functional Model, the RA has the principal responsibility for collecting facility data within its Reliability Authority Area. The portion of the system monitored and analyzed by the TOP are outside the scope of this standard. Because so many commenters indicated a desire for a requirement for the TOP, the SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP’s requirement to collect data.

This requirement and its associated levels of non-compliance were dropped from this standard. Many of the comments provided were applicable to the same requirement for the RA and were applied to the revisions made to the RA’s requirement to collect data.

<p><b>No – Comments indicating non-compliance doesn’t address intent of requirement</b></p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No The compliance levels do not meet the intent of the requirement. The levels of compliance should focus on the TOP’s maintenance of a valid model representation and the collection of real time data.</p>
<p>This requirement was dropped from this standard. Your comments could not be applied to the revised requirement for the RA because your suggestion would expand the scope of the standard, beyond what was identified in the SAR. The requirement for the RA data collection was developed based on the following language from the SAR:</p> <ul style="list-style-type: none"> <li>• Collect data needed for performing real time reliability analyses</li> </ul> <p>The SAR did not address model maintenance.</p>	
<p>Albert M. DiCaprio MAAC #2</p>	<p>No This Matrix is for data handling not for operations.</p>
<p>This requirement was dropped from the standard.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No Based on our comment to question 16, we would recommend that compliance for the TOP be built around providing the requested data to the RA.</p>
<p>The standard was revised and there is a new requirement that the TOP provide data, as specified, to its RA.</p>	
<p>Sam Jones ERCOT #2</p>	<p>Please see comment for Q 15. {The Requirement should be refocused to state that the RA needs to maintain</p>

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<p>OLDTF (9?) 6 - #2 1 - #1,5</p>	<p><i>accurate models and run studies to determine limits rather than directing the RA to collect the data it needs. There should be Requirement for the Transmission Owner, Generation Owner, LSE, and TOP to provide the RA with the data it needs for its studies.</i></p> <p><i>{The RA typically has no control of whether the data is provided, but may have prudent and acceptable measures in place which require the data.}</i></p>
<p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>The standard was revised so the RA needs to develop and distribute a data specification, rather than individual data requests. Corresponding changes were made to other requirements, to ensure that data is provided 'as specified by the RA' rather than 'as requested by the RA'.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>No</p> <p>Non-compliance Level 1 states "data specification(s) was not complete (missing either industry accepted format, timeframe or some data technically inaccurate or incomplete)". It is not clear why the TOP should be held in non-compliance for "technically inaccurate or incomplete" data submitted by other functions. We suggest deleting "or some data technically inaccurate or incomplete".</p>
<p>This requirement was dropped from this standard. Your comments were applied to the same requirement for the RA as follows:</p> <p>The RA produces the data specification – if the data specification is incomplete, then the RA should be sanctioned. The original levels of non-compliance did not state this clearly enough.</p> <p>The non-compliance has been revised and include the following language:</p> <ul style="list-style-type: none"> <li>Data specification(s) was not complete (list of required data, a mutually agreeable format, and timeframe for providing data)</li> </ul>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>This requirement penalizes the TOP for not asking for data that it may not know it needs. For example, if a neighboring TOP energizes a new station, how is the TOP supposed to know that the station exists? If the affected TOP doesn't know, it can't request data and can't tell that it's missing. The RAs should be receiving this information and should be required to disseminate to parties as needed.</p> <p>If this requirement is maintained as is, then the same comment made in response to question #15 applies. That is, the TOP should be non-compliant for not notifying suppliers of data that the information must be technically accurate and complete. The TOP has no control over whether or not the data supplied is accurate and complete and, therefore, level 1 compliance should be altered.</p>
<p>This requirement was dropped from this standard. Your comments were applied to the same requirement for the RA as follows:</p> <p>The RA produces the data specification – if the data specification is incomplete, then the RA should be sanctioned. The original levels of non-compliance did not state this clearly enough.</p> <p>Several commenters noted, as you did, that the RA may not know about system changes that result in the need for data. The requirement was revised so the RA needs to develop and distribute a data specification, rather than individual data requests.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>No</p> <p>There is not compliance level measuring what the TOP actually does with the data. Also, the TOPs should only be measured on things they can affect. For example, would it be the TOP's fault if on of its BAs submitted data that was technically inaccurate or incomplete?</p>

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<p>This requirement was dropped from this standard. Your comments were applied to the same requirement for the RA as follows:</p> <p>This standard must be developed within the scope of the associated SAR. The SAR for this standard included the following requirement for RAs:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul> <p>The standard was revised so the RA needs to develop and distribute a data specification, rather than individual data requests. Corresponding changes were made to other requirements, to ensure that data is provided 'as specified by the RA' rather than 'as requested by the RA'.</p>	
<p><b>No – Comments about inappropriate levels of non-compliance</b></p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No Regardless of format, the TOP receives the specified data or not</p>
<p>This requirement was dropped from this standard. Your comments were applied to the same requirement for the RA as follows:</p> <p>The data needs to be provided in time for use, and needs to be provided in a format that the RA can use.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No 1) Either the TOP provided the data, or it did not provide the data to the RA. 2) Compliance monitoring does not belong in the requirement section of this document. It may belong in another document pertaining to compliance.</p>
<p>This requirement was dropped from this standard. Your comments were applied to the same requirement for the RA as follows:</p> <p>The SDT will ask the industry for feedback on whether to include the reference to the compliance monitor in the standard.</p> <p>The data needs to be provided in time for use, and needs to be provided in a format that the RA can use.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>No Level #1 and #2 non-compliance should be level #3 and level #4 non-compliance. Level #1 and level #2 should be changed to "Not Applicable".</p>
<p>This requirement was dropped from this standard. The financial penalties associated with non-compliance can be quite severe. Not having a data specification is not likely to have as severe an impact on the reliability of the interconnected bulk electric system as exceeding an IROL for a time period greater than T<sub>v</sub>.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No There seems to be some middle ground between yes and no which should fill in levels 3 and 4 as above.</p>
<p>This requirement was dropped from this standard.</p>	
<p><b>No – Other comments</b></p>	
<p>Ed Stein Ray Morella Joanne Borrell FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No Requirements 203 and 204 are very similar. Requirement 203 applies to Reliability Coordinators. Requirement 204 applies to Transmission Operators. The requirements are duplicative. The standard should require accurate models to be maintained by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them maintaining accurate models if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.</p>
<p>This requirement was dropped from this standard.</p>	

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<p>Ken Skroback AL Elec Coop #4</p>	<p>No See #16 above. <i>{ These assumptions work in the new NERC model but don't apply to a small utility (G &amp; T) that is not separated and serves as its own control area. Since non separated utilities are prevented from receiving data from RA's, some of these studies are conducted by the RA using data provided by us to them. We currently don't receive data from other entities, although we provide data to them, and yet our study needs are being met. Since we have no current need for this data, we have no specifications and we have no record of correspondence. According to these measures we would be level 2 non-compliant, yet our study needs are met. I would like a statement in all three measures that states "as required" or "if needed".}</i></p>
<p><a href="#">This requirement was dropped from this standard.</a></p>	
<p>Alan Johnson Mirant #6</p>	<p>No No, only because I don't concur with requirement 16.</p>
<p><a href="#">This requirement was dropped from this standard.</a></p>	
<p>Joseph Buch Madison #4</p>	<p>No See comments on question 15. <i>{The "data" that is to be requested is not defined. As part of this standard one should be able to initially define a handful of key data elements that are required. These key elements would include the minimum information required to support reliability analyses. See question 47 for additional comments.}</i></p>
<p><a href="#">This requirement was dropped from this standard.</a> <a href="#">This standard does not include any requirements that identify what data must be provided – since this may vary from RA to RA.</a></p>	
<p>Ed Riley CA ISO #2</p>	<p>No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p><a href="#">It is important that entities responsible for compliance understand the ramifications of compliance as well as the standard itself. The standard, therefore, will contain compliance requirements along with the standard itself. This principle is inherent in the development of all new standards.</a></p>	
<p>Vern Colbert Dominion #1 Thomas Pruitt Duke #1 Richard Kafka Pepco #1</p>	<p>No</p>

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<b>Yes – Comments suggesting better clarity needed</b>	
Toni Timberman BPA #1	Yes/No Re-word #1 to remove “Industry accepted format” and “technically inaccurate”. Very often the initial data specification will include what is perceived as necessary at the time, and later additional data will be requested. I don’t think a data request from the RA could ever be considered ‘complete’, if that means that every bit of information has been specified that ever could possibly be needed. # 2 seems ok.
This requirement was dropped from this standard. Your comments were applied to revisions made to the same requirement for the RA.	
Gerald Rheault Manitoba #1,3,5,6	Yes Same comment as in #15. <i>{ Manitoba Hydro believes that the industry accepted format should be more clearly defined in some Standard to ensure minimum acceptable level of quality.}</i>
There were many commenters who did not agree with the use of the term, ‘industry accepted format’ and this term is not used in the revised standard. In the revised standard, the term, ‘mutually agreeable format’ is used.	
<b>Yes – Comments about appropriateness of levels of non-compliance</b>	
John Blazekovich Exelon #1,3,5,6	Yes Level 1 non compliance appears to be saying that anytime errors are found and corrected the entity correcting the errors must be found non-compliant for the period before the error was found. Is that the objective of this requirement?
This requirement was dropped from this standard. The revised standard was written more clearly. Under the revised standard, the RA has to produce a data specification that includes at least three things – a list of required data, a mutually agreeable format, and a timeframe for providing data. The word, ‘specification’ is referring to the data specification.	
Alan Boesch NPPD #1	Yes There is no compliance measure to track the TOP’s reporting data that was requested but not received.
Agreed. The SDT felt that if the RA didn’t feel the missing data was important enough to notify the Compliance Monitor, then no sanction should be applied.	
<b>Yes – Other comments</b>	
Roman Carter So Co Gen 3,5,6 (6 members)	Yes However, my comments to question #15 applies here also. <i>{ Is there a standard or requirement for the TOP, BA, or IA to provide this data to the RA so that the RA is not captive. There needs to be some compliance requirement on those entities to provide the data (Maybe a criteria requirement in the certification SARs).}</i>
This requirement was dropped from this standard. There are corresponding requirements that address provision of data, as specified by the RA.	
Kathleen Goodman ISO NE #2	Yes Same comments as 14 and 15 <i>{In general we agree with the requirement. However, it is up to the RA when and how the data will be collected and determined to be reliable. The primary issue we have with this requirement is the need to maintain a record of requested data and an identification of data not delivered.}</i>

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<p>This requirement was dropped from this standard.</p> <p>The language in the same requirement for the RA was changed so the RA does not 'request' data – instead the RA produces and distributes a data specification. With this change, the RA will need to keep a record of its data specification, not its data requests. The RA will need to notify the Compliance Monitor so the Compliance Monitor can address non-compliance with entities that don't provide the needed data.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>Yes</p> <p>See previous comment on the term "industry accepted format". We also felt that compliance monitoring doesn't belong in the requirement section of this document but may reside in another document pertaining to compliance.</p> <p>{ . . . Industry Accepted Format" must not be overly perscrutive and must not preclude mutually agreed upon data exchange methods between adjoining areas. Also how is it proposed to handle "proprietary data"?}</p>
<p>This requirement was dropped from this standard. Your comments were applied to the revisions of the same requirement for the RA. The term, 'industry accepted format' was replaced with 'mutually agreeable format'.</p> <p>The SDT will ask the industry for feedback on whether to include the reference to the compliance monitor in the standard.</p> <p>There is a certification requirement for RAs that addresses confidentiality agreements.</p>	
<p>Darrel Richardson Illinois Power #1, 3</p>	<p>Yes</p> <p>However, this only addresses non-compliance on the part of the TOP. There should be a similar non-compliance penalty that would apply to those to whom the request is made. Requirements 6, 7, 8 and 9 do not parallel entities responsibility to provide information on a day-to-day basis.</p>
<p>This requirement was dropped from this standard. There are requirements in the standard that address provision of data and include sanctions if data is not provided as specified by the RA.</p>	
<p>Bob Burkard NCMPA1 # 3,4,5 Charles Yeung Reliant Energy #6 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 Fred Frederick Vectren #3 George Bartlett Entergy Svcs 1 Joe Minkstein PG&amp;E #5 Karl Kohlrus CWL&amp;P #5 Kim Warren IMO #2 Mike Miller Southern Co #1 Raj Rana AEP #1,3,5,6 Stuart Goza TVA #1 Tony Jankowski We-Energies #4 William Smith Allegheny Pwr #1</p>	<p>Yes</p>



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### 18. Requirement 5 – Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Original Requirement

The Reliability Authority (RA) shall provide data, as specified, by an (associated) RA and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

#### Measure(s)

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to requesting RA or TOP, no less than 7 days prior to the energization of new facilities/changes to existing facilities.

#### Outcome(s)

The RA shall provide data as requested, to its (associated) RA and/or TOP.

#### Revised Requirement

Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.

- Generator operator
- Generator owner
- Reliability authority
- Transmission operator
- Transmission owner

#### Measure(s)

The entity responsible shall provide data, as specified, to the requesting reliability authority, within the time frame specified, in the mutually agreed upon format.

#### Summary Consideration:

Based on the comments submitted, this requirement has been revised to eliminate the requirement that data be provided to the TOP. Clarifying language was added to indicate which RA should be provided the data. The '7 days prior to energization' phrase has been replaced with language that indicates data must be provided as specified by the RA and within the timeframe specified.

The corresponding requirement for the RA was modified to indicate that the RA must specify what data it needs and must distribute the specification to entities with facilities monitored by the RA and to entities that provide facility status to the RA.

The term, 'technically accurate' was modified to say, 'accurate.'

The Outcomes section was redundant and was eliminated.

The term, 'industry accepted format' was replaced with 'mutually agreed upon format' based on the industry's comments.

This requirement was combined with the similar requirements that indicated the RA, TOP, Generator Operator and Generator Owner must provide data. The revised requirement is called, 'Data Provision'.

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No – Comments regarding 7 days	
George Bartlett Energy Svcs 1	No The RA should provide data when requested, not 7 days prior to energization. Please delete the phrase “no less than 7 days prior to the energization of new facilities or changes to existing facilities” from both the Requirements and the Measures.
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.	
Doug Hils Cinergy #1	No Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.	
Bob Burkard NCMPA1 # 3,4,5	No Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA. The RA may choose to address emergency changes in its data specification, but requiring such a provision is beyond the scope of this standard.	
Toni Timberman BPA #1	No The requirement for providing data should rest with the entity energizing the new equipment. Maybe should change the “no less than 7 days” language to say “as specified by the requesting entity, but no less than 7 days”. The RA may not legally be able to pass data that it received from one TOP to another TOP because of confidentiality requirements. A TOP that needs data from another TOP should make arrangements to get that data directly. The RA to RA link is ok. Also, data requests may not necessarily be limited to “new facilities or changes to existing facilities”.
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA. The reference to ‘new facilities or changes to existing facilities’ was removed from this requirement.	
Todd Lucas (6?) Southern Co #1	No A seven day lead time may not, in many cases, be sufficient lead time to incorporate new facilities or changes to existing facilities in models or perform revised analysis. There should also be a requirement to provide data in real time with measures related to timeliness and accuracy.
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA. We expect this data specification will address data needed for operational planning as well as data needed in real time.	
Roman Carter So Co Gen 3,5,6	No A 7 day lead time is not adequate. It would be better for coordination to require no

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(6 members)	less than 1 month lead time.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.	
Francis Halpin BPA Bus Line #5,6	No 7 days is too short a period to fully evaluate the impact of new facilities on system. Six months seems a more reasonable time frame.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.	
Alan Boesch NPPD #1	No Seven days prior to energization may be an unrealistic expectation. What type of data will the RA be providing to another RA or TOP on new or modified facilities? Will the data originate with the RA? If not the standard should be that the RA pass the data on within a specified period of time, but the requirement to provide the data belongs to the entity that owns the facility. Depending on the type of data you are talking about 7 days might be realistic.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA. There is a separate requirement that adds more clarity to the types of data that must be provided to the RA. The RA may be requested to provide data to another RA so that each RA has critical data needed to monitor beyond its own system.	
Vern Colbert Dominion #1	No Seven days is not enough time.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.	
<b>No – Comments requesting more details in requirements</b>	
Alan Johnson Mirant #6	No Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.	
ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2	No What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?
Several commenters suggested the same thing, and the term, 'technically' has been deleted from the revised standard. There is no difference between accurate data and technically accurate data.	
David Kiguel Hydro One #1	No It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.
The RA is responsible for specifying its data requirements in such a manner as will ensure validity for its intended application regardless of its origin or derivation. Please see the revised requirement in this standard called, 'Data Specification.'	
Kim Warren	No

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<p>IMO #2</p>	<p>The data needs to be defined before we can say yes. It could well be that the requested data is not readily available in the EMS or telemetered and may take much longer and could be costly if the providing RA did not feel it was important for his own purposes.</p> <p>See also comments in questions 20, 22, 24 and 26. To meet this requirement the RA needs the data sooner (say in 10 days).</p> <p><i>{Requirement “5” states that the RA has to notify other associated RA’s and TOP’s no less than 7 days prior to energization of new/changed facilities. If the Balancing Authority has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA’s and TOP’s. Therefore I suggest increasing the Transmission Operating Authority (Interchange Authority)(Transmission Owner) (Generator Owners) time line to 10 days.}</i></p>
<p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p> <p>There is a separate requirement that defines the RA’s obligations in specifying what data it needs. (See the revised requirement called, ‘Data Specification &amp; Collection’)</p>	
<p>Thomas Pruitt Duke #1</p>	<p>No</p> <p>Define “associated”. The language is not clear enough. For example, some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.</p>
<p>The standard was modified to replace the term, “associated RA” with “the reliability authority which it has a reliability relationship.”</p> <p>The standard was also modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA</p>	
<p>Susan Morris SERC #2  Robert Reed TS (See List)</p>	<p>No</p> <p>The language is not clear enough. For example some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.</p>
<p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p> <p>The revised standard clarifies that the operational planning analysis being addressed is conducted at least once a day and is looking at the day ahead.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>This requirement is unclear. There is confusion as to the type of data required. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities for planning studies.</p>

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<p>There is a separate requirement in this standard that addresses the type of data to be provided. Please reference the revised requirement now called, “Data Specification &amp; Collection.”</p> <p>The revised standard clarifies that the operational planning analysis being addressed is conducted at least once a day and is looking at the day ahead.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>This is too vague – provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.</p> <p>The industry will need to change its current business practices in order to comply with requirement.</p>
<p>There is another requirement in this standard that addresses the details of the data to be provided. Please reference the revised requirement now called, “Data Specification &amp; Collection.”</p>	
<p><b>No – Mixed comments</b></p>	
<p>Ray Morella Ed Stein Joanne Borrell FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>Change the Requirement from ‘providing specified data no less than 7 days prior to the energization of new facilities’ to ‘providing specified data prior to the energization of new facilities’.</p> <p>(Change ‘by an (associated) RA’ to ‘by another RA’. Less words, more descriptive.</p> <p>Change ‘industry accepted format, timeframe, and technically accurate and complete’ to ‘industry accepted format, accurate and complete’. Timeframe is already specified in the standard. It doesn’t need to be repeated. Delete the description of ‘technically’.</p>
<p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p> <p>The standard was revised to replace “associated RA” with “the reliability authority with which it has a reliability relationship.”</p> <p>The adjective, “technically” was deleted.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No</p> <p>This requirement seems backwards. Shouldn’t the TOP be the entity to provide data on new facilities to the RA? Also, submitting data 7 days prior to the energization of new facilities may not be long enough, especially for operational planning studies that may go out as far as 12 months. Perhaps NERC should not make this requirement, but leave it up to the Region, or Reliability Authority to determine what the appropriate notification time is.</p>
<p>The revised standard includes a requirement that the TOP provide data to its RA.</p> <p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p>	
<p>Richard Schwarz PNSC #2</p>	<p>No</p> <p>The entity who owned the information should provide it to who needs it. The RA may be constrained due to confidentiality agreements from passing the data on to entities other than another RA.</p> <p>The RA should be able to request data at any time, not just prior to energization of new facilities.</p>

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The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the specified data must be provided within the timeframe specified by the RA and does not make reference to 'energization of new facilities.'

The standard does not include any requirements for the RA to share the data it collects.

The standard was revised to require the RA to 'specify' what data it needs, rather than 'request' data. The RA must distribute the data specification and associated entities must provide data as specified.

<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>A RA should have to share data (modeling information) with their TOPs and any other RA that requests the information. The requirement needs to be clear that a TOP that desires data from an RA other than its own RA should ask their own RA for that data and then their RA would ask the other RA. The other RA (the RA with the data) then should have to notify and receive approval from the owner of the data (TOP or Generator) before providing the data for use by a non-associated TOP.</p> <p>Why 7 days? If the intent is to ensure the requestor knows about the new facilities and can update their model before energization of the new facilities, then more than 7 days notice should be required. If the intent is to ensure the requestor is receiving the real-time data associated with the new facilities, then 7 days may be adequate.</p> <p>Generally speaking, the TOP and Generator should be required to push data up to the RA, BA, and IA. The RA, BA, and IA should be required to specify the data they require within industry guidelines for reasonability.</p>
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The requirements in this standard need to be within the scope of the associated SAR. The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The RA, not the TOP, is responsible for preventing instability, uncontrolled separation or cascading outages. While the TOP may need data from its RA, the sharing of that data is beyond the scope of this standard.

The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the specified data must be provided within the timeframe specified by the RA and does not make reference to 'the energization of new facilities.'

This standard only addresses the data needed by the RA to support real time monitoring, operational planning analyses and real time assessments of its reliability area that are conducted relative to operating within its reliability area's interconnection reliability operating limits. Expanding the scope to address data to be provided to the BA and IA is outside the scope of this standard.

This standard was revised to indicate that the RA shall develop and distribute a data specification – and that the specification shall include a list of required data, a mutually agreeable format, and timeframe for providing data. Many commenters indicated that there aren't any 'industry guidelines' for reasonability, and each RA may have unique data needs.

<p>Peter Burke ATC #1</p>	<p>No</p> <p>Three concerns with this requirement:</p> <ul style="list-style-type: none"> <li>(6) TOP should not make requests, per response to question #16. Rather, the RA should make the requests and then hand that data down to the TOP.</li> <li>(6) This requirement and the others like it for the BA, IA, Generator and Transmission Owner (TOW) all state that the data should be supplied "as requested". That is needed but there should also be a requirement that RAs, IAs, BAs, Generators and TOWs should supply this information to one another, without a request, if the data has to do with major/critical facilities (i.e. an entity may not realize they should make a request.)</li> <li>(6) The requirement directs that data must be provided no less than 7 days in advance. Some new facilities can be significant so that 7 days in advance is not enough time for receiving data. In some cases, data for significant new</li> </ul>
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	<p>facilities would be needed a season or a year in advance.</p> <p>4. Estimated or approximate data should be acceptable prior to energization. “As built” data would be provided when available or when required telemetry is complete.</p>
<p>This requirement was modified so the TOP does not make data requests. However, this standard does not address how the TOP will acquire the data it needs. As revised this standard doesn’t include any requirements for the TOP to monitor and assess its subset of the transmission system.</p> <p>This standard only addresses the data the RA needs to support its responsibility of ensuring that its portion of the interconnected transmission system is being operated so it doesn’t exceed IROLs. Other standards will need to address the transfer of data to support other responsibilities.</p> <p>The reference to a 7 day time frame has been dropped from this standard. Many commenters indicated that a standard time frame for providing data was unrealistic. In the revised standard, each RA is required to specify a time frame for providing data.</p> <p>The reference to ‘prior to energization’ has been dropped from this standard. Many commenters indicated that there is no one perfect time frame for providing this data.</p>	
Joseph Buch Madison #4	<p>No</p> <p>See comments on question 26.</p> <p><i>{ The standard does not spell out the “data” required. There are certain key items which at a minimum are necessary to perform reliability analysis. These should be enumerated and a part of this standard. See further comments in questions 14 and 47.}</i></p>
<p>There is another requirement in this standard that charges the RA with responsibility for prescribing what data is needed. NERC will not produce a standard list of data to be supplied, since the data needed varies from one RA to another RA.</p>	
Compliance Managers	<p>The requirement for data provision/collection/timing and model development, and related compliance measurements and levels of non-compliance should be dealt with through the present working groups that are doing this work.</p>
<p>The SAR for this standard includes the following:</p> <p>Collect data needed for performing real time reliability analyses</p>	
Fred Frederick Vectren #3	<p>No</p>
<p><b>Yes – Comments about 7 days</b></p>	
Kathleen Goodman ISO NE #2	<p>Yes/No</p> <p>Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during ‘cut-over’ activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.</p>
<p>The standard was revised to indicate the RA is responsible for specifying when data must be provided.</p>	
Gerald Rheault Manitoba #1,3,5,6	<p>Yes</p> <p>Manitoba Hydro questions the 7 day period specified. Some processes would require significantly more lead time than that while some require less; how was the 7 day time chosen. The issue is one of supplying data on a timely basis. Isn’t that covered by another requirement.</p>
<p>The standard was revised to indicate the RA is responsible for specifying when data must be provided.</p>	
John Blazekovich Exelon #1,3,5,6	<p>Yes</p> <p>Estimated data that describes equipment should be provided several months in advance of energization so that operational planning studies (12 months in</p>

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	advance) can be performed. Estimated data is probably adequate for the equipment energization provided as-built data is provided within a reasonable amount of time. We suggest one month after energization as a reasonable time frame for providing as-built data. “Estimated” versus “as-built” data should be defined.
The standard was revised to indicate the RA is responsible for specifying when data must be provided.	
Yes – Comments indicating more details needed	
Mike Miller Southern Co #1	Yes Energization is testing or commercial date, needs definition.
The standard was revised to eliminate the phrase, ‘prior to energization of . . .’	
Tom Petrich (5) PG&E #1	Yes “Data” is open-ended. If the “data” refer to system parameters, then they would have to be calculated data and not “actual” or “state estimated”. If the requirement is for test data, some of them may not be available until after energization. We suggest adding qualifications to limit the universe of “data” required.
The standard was revised to add some qualifiers to the type of data that may be requested by the RA. In the revised standard, the RA must specify what data it needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area as they relate to operating without exceeding interconnection reliability operating limits.	
Yes – Other comments	
Ed Riley CA ISO #2	Yes The text of the Requirement should be changed to read “The RA shall specify data to be provided”
There is another requirement in this standard that addresses the RA’s data specification.	
Tony Jankowski We-Energies #4	Yes Concern: If this is real-time operational data, the communication links may take 30-90 days to establish. Requirement #3 and Requirement #4 require RA and TOP to request specific data requirements. This must be timely to achieve this Requirement #5.
The standard was revised to indicate the RA is responsible for specifying when data must be provided.	
Albert M. DiCaprio MAAC #2	Yes By allowing the RA to define the data required for its needs properly places the responsibility on the RA and avoids the problem of developing a standard that includes identifying specific data. The need to exclude the TOP is still noted.
The TOP has been omitted from this requirement.	



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Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 James Stanton Calpine #5 Joe Minkstein PG&E #5 Karl Kohlrus CWL&P #5 Lee Westbrook Oncor #1 OLDTF (9?) 6 - #2 1 - #1,5 Richard Kafka Pepco #1 Sam Jones ERCOT #2 Stuart Goza TVA #1 William Smith Allegheny Pwr #1	Yes
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**19. Requirement 5 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Not Applicable</li> <li>2. Not Applicable</li> <li>3. Not Applicable</li> <li>4. Data for new/revised facilities was not provided as requested</li> </ol>
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<p><b>Revised Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Not applicable</li> <li>2. Not applicable</li> <li>3. Not applicable</li> <li>4. Data not provided to the reliability authority as specified.</li> </ol>
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**Summary Consideration:**

The fourth level of non-compliance was modified to conform with the language in the revised requirement. The reference to 'new/revised facilities' was dropped – the revised requirement addresses the data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.

Several commenters suggested adding more levels of non-compliance – to give partial credit for having the data a little incorrect, or a little late, in an almost acceptable format, etc. The result of all of these is the same – the RA doesn't have the data it needs to accurately assess the system. There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any of its interconnection reliability operating limits. For these reasons, additional levels of non-compliance were not added. The industry will be asked to comment on this decision in the next posting of this standard.

<b>No – Comments indicating identifying levels of non-compliance is premature/inappropriate</b>	
Gregory Campoli NY ISO #2	No Premature to define levels of non compliance
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1	No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	

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Ed Riley CA ISO #2	No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Kim Warren IMO #2	No The data needs to be defined before we can say yes. It could well be that the requested data is not readily available in the EMS or telemetered and may take much longer and could be costly if the providing RA did not feel it was important for his own purposes.
This standard will not define specifically what data must be provided. Data requirements vary from RA to RA and under the proposed standard, each RA must decide what data it needs and must develop a specification for that data.	
No – Comments indicating non-compliance needs to better match requirements	
Joseph Buch Madison #4	No See comments on question 27.  <i>{ There is only 1 level of non-compliance, level 4 and no definition of the data required. If certain key items of "data" were defined as part of the standard and they were not provided, a level 4 non-compliance would be appropriate. If these items were provided, however they were only provided 2 days before energization a level 3 non-compliance might be appropriate. Similarly, if the data on the key items were provided 3 to 7 days before energization a level 2 non-compliance might be appropriate. See further comments in question 47.}</i>
There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating within interconnection reliability operating limits. This standard will not define specifically what data must be provided. Data requirements vary from RA to RA and under the proposed standard, each RA must decide what data it needs and must specify that data.	
John Blazekovich Exelon #1,3,5,6	No Level of non-compliance should be tied to the impact of changes to the system. As stated the level of non-compliance is equal for major and minor changes in transmission system configuration, levels of non-compliance should recognize the difference.  Non compliance should be tied to the standard time frame for supplying data. Data maintenance is an on-going activity, the drafting team should recognize and address data maintenance and compliance implementation.
This standard is only addressing a subset of the data that must be provided to an RA. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating within interconnection reliability operating limits.  There were many commenters who objected to a standard time frame for supplying data, and that requirement has been modified to allow the RA to identify the time frame for supplying data. This should allow each RA to identify a time frame that is appropriate.  The standard was revised to shift the focus from data relative to new or changed facilities to all data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.	
Francis Halpin	No

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BPA Bus Line #5,6	There should be levels of compliance based upon notification and collaboration with affected parties
These levels of non-compliance must be linked to this requirement. This requirement does not have a notification component. Levels of non-compliance for notification and collaboration would be more appropriate for the requirement that address specifying what data is needed.	
FRCC 6-#1, 4-#2, 1-#2	No Requirements 4 and 5 need to be combined and focus on the TOP providing data to the RA when appropriate or requested. The RA needs to have a process in place for obtaining the data it needs which would include the timeframe for submitting data as well as the specification of what data is needed.
All of the similar requirements for providing data have been combined into a single requirement called "Data Provision." The TOP has been added to the list of functions that must provide data to its RA.	
Todd Lucas (6?) Southern Co #1	No The RA should be required to cooperate with entities requesting data and should provide the "agreed upon" data in a timely manner. The RA should not be required to blindly provide data without an understanding of the need.
The Functional Model identifies the RA as the entity with ultimate responsibility for reliability within its reliability area. The RA should not have to negotiate for data it needs. The revised standard does add some restrictions to the number of RAs that can request data by indicating that entities need to provide data to RAs that monitor their facilities. The revised standard does add some restrictions to the scope of the data to be provided by indicating this is data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits	
George Bartlett Entergy Svcs 1	No There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".
There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs. It would be very difficult to determine that the lack of data, by itself, resulted in operating outside an IROL – for this reason the suggestion was not implemented.	
No – Comments indicating levels are inappropriate	
Alan Johnson Mirant #6	No Not sure that non-compliance should jump right to level 4.
There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.	
Alan Boesch NPPD #1	No The level of non-compliance does not seem appropriate. Start at level one and

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	then escalate up through the different levels depending on how late it is seems to be more appropriate.
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No</p> <p>In general there should be at least two levels of non-compliance identified. Why does the data have to be requested? How often should an entity request data? Should data requests be a one time declaration in writing asking for data on new facilities? Is this requirement needed since there is not enough detail to assess non-compliance?</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The standard was revised to change the language so the data isn't 'requested', it is 'specified.' The RA must distribute the data specification to the entities with facilities monitored by that RA and to the entities that provide the RA with facility status.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>No</p> <p>Seems like there should be more than one level of non-compliance. What if the data was incomplete for example? Shouldn't merit some non-compliance penalty?</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROs.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Levels of non-compliance would be better if defined something like:</p> <ul style="list-style-type: none"> <li>(6 Data for new/revised facilities was provided less than seven days prior to energization.</li> <li>(6 Data for new/revised facilities was provided before one month after but not before energization.</li> <li>(6 Data for new/revised facilities was provided before three months but not before one month after energization.</li> <li>4. Data for new/revised facilities was not provided within three months after energization.</li> </ul>

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<p>The requirement was changed to allow each RA the flexibility to assign its own 'due date', so adopting these recommended levels of non-compliance is no longer appropriate. The result of all of these is the same – the RA doesn't have the data it needs to accurately assess the system.</p>	
<p><b>No – Comments suggesting additional changes to requirements</b></p>	
<p>Karl Kohlrus CWL&amp;P #5</p>	<p>No There should be a reminder sent out if the data is not sent initially before going directly to Level 4.</p>
<p>Each entity must assume responsibility for meeting its own requirements. The suggestion that a reminder be sent out has not been adopted.</p>	
<p>Thomas Pruitt Duke #1 Fred Frederick Vectren #3</p>	<p>No</p>
<p><b>Yes – Comments suggesting additional changes to requirements</b></p>	
<p>Richard Schwarz PNSC #2</p>	<p>Yes This requirement should be for any data request, not just for new or revised facilities.</p>
<p>The requirement that addresses the RA's data requests was modified to reflect this suggestion. The revised standard addresses all data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within interconnection reliability operating limits.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes Again, a data request may not necessarily pertain to new or revised facilities. Requirement must be made more generic.</p>
<p>The requirement that addresses the RA's data requests was modified to reflect this suggestion. The revised standard addresses all data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within interconnection reliability operating limits.</p>	

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<p>Albert M. DiCaprio MAAC #2          Bob Burkard NCMPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          Doug Hils Cinergy #1          ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2          Ed Stein Firstenergy Sol #6          Gerald Rheault Manitoba #1,3,5,6          James Stanton Calpine #5          Joanne Borrell FirstEnergy Sol #3          Joe Minkstein PG&amp;E #5          Kathleen Goodman ISO NE #2          Mike Miller Southern Co #1          OLDTF (9?) 6 - #2 1 - #1,5          Ray Morella FirstEnergy #1          Richard Kafka Pepco #1          Roman Carter So Co Gen 3,5,6 (6 members)          Sam Jones ERCOT #2          Stuart Goza TVA #1          Tom Petrich (5) PG&amp;E #1          Tony Jankowski We-Energies #4          Vern Colbert Dominion #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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**20. Requirement 6 – Do you agree with this requirement and its associated performance/outcome and measure/s?**

<p><b>Original Requirement</b></p> <p>The Balancing Authority (BA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities</p> <p><b>Measure(s)</b></p> <p>Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.</p> <p><b>Outcome(s)</b></p> <p>The BA shall provide data, as requested, to its (associated) RA and/or TOP.</p>
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**Revised Requirement: None**

**Summary Consideration:**

Several commenters indicated that the BA does not have any facility data to provide to the RA, and this is true. This requirement was dropped from this standard.

<b>No – Comments about appropriateness of requirement</b>	
Albert M. DiCaprio MAAC #2	No The Functional Model only assigns the BA responsibility for Balancing not for facility data.
Agreed. This requirement has been dropped from this standard.	
Richard Kafka Pepco #1	No BA is not responsible for facility data
Agreed. This requirement has been dropped from this standard.	
Tony Jankowski We-Energies #4	No The RA/TOP should already have all required data as stated in Requirement #3 and Requirement #4.
The original Requirements 3 and 4 addressed the requests for data. By themselves, these two requirements would not result in the RA having all the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within interconnection reliability operating limits. This requirement has been dropped from this standard because the BA doesn't have any facility data to provide to the RA.	
Tom Petrich (5) PG&E #1	We are not sure what kind of data the BA function can provide before energization. An example would be helpful.
This requirement has been dropped from this standard. The BA does not have any facility data.	
John Blazekovich Exelon #1,3,5,6	No Do not understand the need for this requirement



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<p>This requirement has been dropped from this standard. The BA does not have any facility data.</p>	
<p><b>No – Comments about scope of requirement</b></p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No This requirement should not just focus on new facilities or changes to existing facilities. As we have stated for the TOP, the BA should have requirements for providing the data to the RA as specified by the RA and in the timeframe the RA needs.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data.</p>	
<p>Kim Warren IMO #2</p>	<p>No Requirement “5” states that the RA has to notify other associated RA’s and TOP’s no less than 7 days prior to energization of new/changed facilities. If the Balancing Authority has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA’s and TOP’s. Therefore I suggest increasing the Transmission Operating Authority time line to 10 days.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to the requirement that addresses the RA’s data specification. The standard was revised to indicate that the RA shall specify the time frame for providing data. This should correct the timing issue you highlighted.</p>	
<p>Peter Burke ATC #1</p>	<p>No Same concerns as expressed in reply to Question 18. One entity may not know it should request information from another entity. There should also be a requirement on the entity where the change is occurring to provide that data, unrequested, to the other entities if it involves major/critical facilities.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to the requirement that the RA develop and distribute a data specification. This should eliminate the need for individual data requests. Other requirements address the need to submit data to the RA as specified by that RA.</p>	
<p>Compliance Managers</p>	<p>The requirement for data provision/collection/timing and model development, and related compliance measurements and levels of non-compliance should be dealt with through the present working groups that are doing this work.</p>
<p>Although this requirement was dropped from this standard, other requirements for the provision of data have not been dropped because the SAR for this standard includes the following:</p> <ul style="list-style-type: none"> <li>• Collect data needed for performing real time reliability analyses</li> </ul>	
<p><b>No – Comments about 7 days</b></p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No 7 days is too short a period to fully evaluate the impact of new facilities on system. Six months seems a more reasonable time frame.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to ‘7 days’ from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?</p>

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<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to '7 days' from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p>Vern Colbert Dominion #1</p>	<p>No Seven days is not enough time.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to '7 days' from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>No More lead time should be required such as 1 month.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to '7 days' from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No See comments for #18. <i>{ A seven day lead time may not, in many cases, be sufficient lead time to incorporate new facilities or changes to existing facilities in models or perform revised analysis. There should also be a requirement to provide data in real time with measures related to timeliness and accuracy. }</i></p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to '7 days' from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No The BA should provide data when requested, not 7 days prior to energization. Please delete the phrase "no less than 7 days prior to the energization of new facilities or changes to existing facilities" from both the Requirements and the Measures.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to '7 days' from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p>Bob Burkard NCMPA1 # 3,4,5</p>	<p>No Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. The standard was modified to indicate that the RA must develop and distribute a data specification to identify what data it needs and the time frame for providing that data. The RA may choose to address emergency changes in its data specification, but requiring such a provision is beyond the scope of this standard.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No Seven days prior to energization may be an unrealistic expectation. What type of</p>

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	<p>data will the BA be providing to an associated RA or TOP on new or modified facilities? Will the data originate with the BA? If not the standard should be that the BA pass the data on within a specified period of time, but the requirement to provide the data belongs to the entity that owns the facility. Depending on the type of data you are talking about 7 days might be realistic.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to '7 days' from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes/No Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data. Your comment was applied to the changes made to remove the references to '7 days' from this standard. In the revised standard, each RA specifies a time frame for providing it with the data it needs. This should allow each RA to identify a realistic time frame for different types of data.</p>	
<p><b>No – Comments asking for more details in requirement</b></p>	
<p>Alan Johnson Mirant #6</p>	<p>No Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?</p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No It is not clear whether the BA must supply this data to any requesting RA or just of the RA that has jurisdiction over the BA's area. We propose that the BA should only have to supply this information to his RA. Other RA's should contact the BA's RA for the information. Further, we suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13. <i>{ If the requirement was changed to the TOP providing real time data, equipment limits, and model updates to their RA as specified by their RA, then the levels of non-compliance could be:</i> (6) <i>Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for up to 24 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i> (6) <i>Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 24-36 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i> (6) <i>Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 36-48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i> (6) <i>Actual TOP telemetered data specified is not be provided by the TOP to the</i></p>

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	<p><i>RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period greater than 48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant), or</i></p> <p><i>the TOP did not station personnel at the Station or Plant as directed by the RA to provide this data while telemetry was being restored, or</i></p> <p><i>the TOP did not provide equipment limits as requested, or</i></p> <p><i>The TOP did not provide modeling update information until after the energization of new facilities.</i></p> <p><i>Note: the idea is that depending on system conditions, the RA may be able to rely on their previous operational planning analysis (next day analysis) for a day or so. However, if system conditions warrant, the RA should have the authority to direct the TOP to man the station and if the TOP refuses that should be considered a significant infraction.</i></p> <p><i>Need to define “surrogate value” and “surrogate data”. }</i></p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROs.</p>	
<p>Guy Zito (See List) NPCC #2 – 2, NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No</p> <p>It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.</p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p>	
<p>Joseph Buch Madison #4</p>	<p>No</p> <p>See comments on question 26.</p> <p><i>{ The standard does not spell out the “data” required. There are certain key items which at a minimum are necessary to perform reliability analysis. These should be enumerated and a part of this standard. See further comments in questions 14 and 47. }</i></p>
<p>This requirement has been dropped from this standard. The BA does not have any facility data.</p> <p>This standard will not provide a list of data that must be provided because any list developed would be more restrictive than needed for some RAs and would not be restrictive enough for other RAs. As revised, the standard requires each RA to specify what data it needs and to distribute the data specification to the entities that have facilities monitored by that RA and to the entities that provide the RA with facility status.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operation planning. This does not work for data being provided for the first time from new facilities such as engineering data.</p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p>	

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<p>Thomas Pruitt Duke #1 Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No</p> <p>The language is not clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data – from testing, real-time operation, engineering specifications, manufacturer’s specifications, etc.</p> <p><i>{ For example some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}</i></p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to ‘7 days’ have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p><b>No –Mixed comments</b></p>	
<p>Lloyd Linke MAPP #2</p>	<p>This is too vague – provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.</p> <p>The industry will need to change its current business practices in order to comply with requirement</p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to ‘7 days’ have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1, 3, 6</p>	<p>No</p> <p>(1) Change the Requirement from ‘providing specified data no less than 7 days prior to the energization of new facilities’ to ‘providing specified data prior to the energization of new facilities’.</p> <p>(2) not sure if ‘shall provide data as specified by an (associated ) Reliability Coordinator’ means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the BA can request the data. The standard needs to be clear on which meaning is correct.</p> <p>(3) Change ‘industry accepted format, timeframe, and technically accurate and complete’ to ‘industry accepted format, accurate and complete’. Timeframe is already specified in the standard. It doesn’t need to be repeated. Delete the description of ‘technically’.</p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to ‘7 days’ have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p> <p>The revised standard clarifies that the RA must develop a data specification and distribute the data specification to those entities that have facilities monitored by that RA. The revised standard limits the functions that must provide data to the RA to just those with facilities monitored by the RA and those that provide the RA with facility status.</p> <p>The revised standard doesn’t use the terms, ‘industry accepted format’, or ‘technically accurate’.</p>	
<p>ECAR Ops Panel #1 – 8</p>	<p>No</p> <p>Change the Requirement from (providing specified data no less than 7 days prior to the energization of new facilities) to (providing specified data prior to the</p>

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<p>#5 – 1 #2 – 2</p>	<p>energization of new facilities). I can just see someone delaying the installation of a needed facility for 7 days because they didn't want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment.</p> <p>I'm not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the BA can request the data. The standard needs to be clear on which meaning is correct.</p> <p>Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'. What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?</p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to '7 days' have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p> <p>The revised standard clarifies that the RA must develop a data specification and distribute the data specification to those entities that have facilities monitored by that RA and to those entities that provide the RA with facility status.</p> <p>The revised standard doesn't use the terms, 'industry accepted format', or 'technically accurate'.</p>	
<p>Fred Frederick Vectren #3</p>	<p>No</p>
<p><b>Yes – Comments about 7 days</b></p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>See comments for Requirement 5 <i>{ I agree with the requirement, but I question the value of making a hard 7-day rule. Why not 14 days or 21 days???? }</i></p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to '7 days' have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes See comment for #18. <i>{ Manitoba Hydro questions the 7 day period specified. Some processes would require significantly more lead time than that while some require less; how was the 7 day time chosen. The issue is one of supplying data on a timely basis. Isn't that covered by another requirement. }</i></p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to '7 days' have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p>Sam Jones ERCOT #2OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>Yes The timing of this requirement conflicts with Requirement 5. That is, the seven days does not leave the RA any time to complete its obligations under requirement 5.</p>

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<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to '7 days' have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes</p> <p>The language "no less than 7 days prior to the energization of new facilities or changes to existing facilities" is not relevant to BA data, since the BA is not normally involved with new facilities and the data requested from a BA is very different than from the other functions.</p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to '7 days' have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p>Richard Schwarz PNSC #2</p>	<p>Yes</p> <p>Should pertain to any facilities at any time with the timeframe defined by the RA according to its needs.</p>
<p>This requirement was addressing data related to facilities and has been dropped from this standard. The BA does not have any facility data.</p> <p>In the revised standard, all references to '7 days' have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p>Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Ed Riley CA ISO #2 James Stanton Calpine #5 Joe Minkstein PG&amp;E #5 Karl Kohlrus CWL&amp;P #5 Lee Westbrook Oncor #1 Mike Miller Southern Co #1 Stuart Goza TVA #1 William Smith Allegheny Pwr #1</p>	<p>Yes</p>

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**21. Requirement 6 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Not Applicable</li> <li>2. Not Applicable</li> <li>3. Not Applicable</li> <li>4. Data for new/revised facilities was not provided as requested</li> </ol>
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**Revised Levels of Non-compliance: None**

**Summary Consideration:**

Several commenters indicated that the BA does not have any facility data to provide the RA. Consequently, this requirement was dropped from the revised standard.

Comments that provided specific suggestions for improvements to the levels of non-compliance have been considered for their application to the same requirement for other functions.

We will ask the industry for feedback to verify that dropping this requirement meets the industry's approval.

<b>No – Comments about appropriateness of levels of non-compliance</b>	
Raj Rana AEP #1,3,5,6	<p>No</p> <p>What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?</p>
<p>This requirement was dropped from this standard. For the similar data provision requirements, the language was changed to omit the references to '7 days'. The revised standard requires the RA to develop and distribute a data specification – the data specification must include the time frame for providing the data.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs.</p>	
George Bartlett Entergy Svcs 1	<p>No</p> <p>There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".</p>
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs. It would be very difficult to determine that the lack of data, by itself, resulted in operating outside an IROL – for this reason the suggestion was not implemented.</p>	



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Francis Halpin BPA Bus Line #5,6	No There should be levels of compliance based upon notification and collaboration with affected parties
<p>This requirement was dropped from this standard.</p> <p>Levels of non-compliance must be linked to the associated requirement. This requirement did not have a notification component. Levels of non-compliance for notification and collaboration would be more appropriate for the requirement that address specifying what data is needed.</p>	
Alan Johnson Mirant #6	No Not sure that non-compliance should jump right to level 4.
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
Alan Boesch NPPD #1	No The level of non-compliance does not seem appropriate. Starting at level one and then escalate up through the the different levels depending on how late it is seems to be more appropriate.
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
Peter Burke ATC #1	<p>No</p> <p>Why do we go straight to level 4? Is it assumed that things are already working properly and that the penalty is being applied due to a lapse? If there are fines for non-compliance, are people incented to avoid paying fines by not energizing new equipment that's needed for reliability?</p> <p>Levels of non-compliance would be better if defined something like:</p> <ul style="list-style-type: none"> <li>(6 Data for new/revised facilities was provided less than seven days prior to energization.</li> <li>(6 Data for new/revised facilities was provided before one month after but not before energization.</li> <li>(6 Data for new/revised facilities was provided before three months but not before one month after energization.</li> <li>4. Data for new/revised facilities was not provided within three months after energization.</li> </ul>
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The corresponding requirement for the RA to specify what data it needs was changed to allow each RA the flexibility to assign its own 'due date', so adopting these recommended levels of non-compliance is no longer appropriate.</p> <p>The result of all of these is the same – the RA doesn't have the data it needs to accurate assess the system.</p>	
Joseph Buch Madison #4	No See comments on question 27.

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	<p><i>{ There is only 1 level of non-compliance, level 4 and no definition of the data required. If certain key items of “data” were defined as part of the standard and they were not provided, a level 4 non-compliance would be appropriate. If these items were provided, however they were only provided 2 days before energization a level 3 non-compliance might be appropriate. Similarly, if the data on the key items were provided 3 to 7 days before energization a level 2 non-compliance might be appropriate. See further comments in question 47.}</i></p>
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA’s ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The corresponding requirement for the RA to specify what data it needs was changed to allow each RA the flexibility to assign its own ‘due date’, so adopting these recommended levels of non-compliance is no longer appropriate. The result of all of these is the same – the RA doesn’t have the data it needs to accurately assess the system.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>See comments for requirement 5</p> <p><i>{ Seems like there should be more than one level of non-compliance. What if the data was incomplete for example? Shouldn’t merit some non-compliance penalty?}</i></p>
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA’s ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. Whether the data is incomplete or incorrect or not provided, the result is the same – the RA doesn’t have the data it needs to accurately assess the system.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Perhaps there should be several levels that are time dependent. See earlier comments regarding self certification and re-certification.</p> <p><i>{ Section 201 (e) states that the RA will demonstrate compliance thru the self certification process with re-certification on a schedule established by the compliance monitor. We do not agree with the re-certification part of this statement. The compliance monitoring of this standard is not for certification on an entity performing a function.</i></p> <p><i>There is no need for any re-certification in connection with this standard. The self certification process is just a way for an entity to provide information to the compliance monitor that will be validated thru spot reviews etc. The re-certification statement appears in every compliance section in this document. It needs to be removed throughout.}</i></p>
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA’s ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The corresponding requirement for the RA to specify what data it needs was changed to allow each RA the flexibility to assign its own ‘due date’, so adopting these recommended levels of non-compliance is no longer appropriate. Whether the data is one day late or five months late, the result is the same – the RA doesn’t have the data it needs to accurately assess the system.</p> <p>Re-certification as used here, is not the certification process that an entity goes through to receive a ‘certificate’ to operate as a reliability function. Self-certification is a term used in the compliance program that refers to a process whereby an entity completes a form that states the entity is in compliance – and re-certification is the periodic re-submittal of that form to restate that the entity is still in compliance with the associated requirement.</p>	
<p><b>No – Comments indicating addressing non-compliance now is premature</b></p>	

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Thomas Pruitt Duke #1 Todd Lucas (6?) Southern Co #1 Susan Morris SERC #2 Robert Reed TS (See List)	No Until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined. In general there should be at least two levels of non-compliance identified..
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
Ed Riley CA ISO #2	No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1	No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
Gregory Campoli NY ISO #2	No It is premature to develop compliance levels at this time.
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p><b>No – Comments indicating an expansion of the requirements is needed</b></p>	
Karl Kohlrus CWL&P #5	No There should be a reminder sent out if the data is not sent initially before going directly to Level 4.
<p>This requirement was dropped from this standard.</p> <p>Each entity must assume responsibility for meeting its own requirements. The suggestion that a reminder be sent out has not been adopted.</p>	
John Blazekovich Exelon #1,3,5,6 Albert M. DiCaprio MAAC #2 Tony Jankowski We-Energies #4	No

**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

Fred Frederick Vectren #3	
Toni Timberman BPA #1	Yes delete new/revised facilities
<p><a href="#">This requirement was dropped from this standard.</a>  <a href="#">The standard was revised so that all references to 'new/revised facilities' were dropped.</a></p>	
Richard Schwarz PNSC #2	Yes Should pertain to all facilities
<p><a href="#">This requirement was dropped from this standard.</a>  <a href="#">The standard was revised so that all references to 'new/revised facilities' were dropped.</a></p>	
Bob Burkard NCMPA1 # 3,4,5 Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2 Ed Stein Firstenergy Sol #6 Gerald Rheault Manitoba #1,3,5,6 James Stanton Calpine #5 Joanne Borrell FirstEnergy Sol #3 Joe Minkstein PG&E #5 Kathleen Goodman ISO NE #2 Kim Warren IMO #2 Mike Miller Southern Co #1 Ray Morella FirstEnergy #1 Richard Kafka Pepco #1 Roman Carter So Co Gen 3,5,6 (6 members) Sam Jones ERCOT #2 Stuart Goza TVA #1 Tom Petrich (5) PG&E #1	Yes

**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

**22. Requirement 7 – Do you agree with this requirement and its associated performance/outcome and measure/s?**

<p><b>Original Requirement</b></p> <p>The Interchange Authority (IA) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities</p> <p><b>Measure(s)</b></p> <p>Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.</p> <p><b>Outcome(s)</b></p> <p>The IA shall provide data, as requested, to its (associated) RA and/or TOP.</p>
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Revised Requirement: None

**Summary Consideration:**

Several commenters indicated that the IA does not have any facility data to provide to the RA that is needed to support real time monitoring or analyses and isn't already addressed by another standard. Consequently, this requirement was dropped from the revised standard.

<b>No – Comments indicating not appropriate for the IA</b>	
Francis Halpin BPA Bus Line #5,6	No Responsibilities relegated to the IA in the Functional Model are related to the implementation of Interchange Schedules; they do not include responsibilities related to this requirement.
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the Coordinate Interchange Standard.	
Albert M. DiCaprio MAAC #2	No IA is not involved with facility data – (only Interchange Schedules)
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the Coordinate Interchange Standard.	
Peter Burke ATC #1	No Same responses as provided to Questions 18 & 20. <i>{{A seven day lead time may not, in many cases, be sufficient lead time to incorporate new facilities or changes to existing facilities in models or perform revised analysis. There should also be a requirement to provide data in real time with measures related to timeliness and accuracy.}}</i> (What new facilities would an IA be placing into service?)
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the Coordinate Interchange Standard. The revised standard does not include the '7 day' lead time – in the revised standard each RA must specify when it needs data.	
Sam Jones	No

## Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

ERCOT #2OLDTF (9?) 6 - #2 1 - #1,5	This Requirement makes no sense. The IA authorizes next-hour bilateral Transactions and Market dispatch that are ready for physical implementation.
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the <a href="#">Coordinate Interchange Standard</a> .	
Vern Colbert Dominion #1	No It is not clear what data the IA would be required to provide.
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the <a href="#">Coordinate Interchange Standard</a> .	
Richard Kafka Pepco #1	No IA is responsible for interchange information, not facility data
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the <a href="#">Coordinate Interchange Standard</a> .	
Tony Jankowski We-Energies #4	No The RA/TOP should already have all required data as stated in Requirement #3 and Requirement #4.
The original Requirement 3 addressed the RA requesting data from all functions with facilities monitored by that RA. The original Requirement 4 addressed one RA providing data to another RA. By themselves, these two requirements would not result in the RA having all the data it needs. This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the <a href="#">Coordinate Interchange Standard</a> .	
Tom Petrich (5) PG&E #1	We are not sure what kind of data the IA function can provide before energization. An example would be helpful.
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the <a href="#">Coordinate Interchange Standard</a> .	
FRCC 6-#1, 4-#2, 1-#2	No First of all, the information the IA will be providing the RA will deal with interchange schedules. We are not sure what other information the IA will be giving the RA or TOP for that matter that will involve new facilities. Would it be more appropriate to have the requirement center around the IA providing the interchange information to the RA in a timely manner so that the impact of the interchange schedules can be considered in the reliability analyses?
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the <a href="#">Coordinate Interchange Standard</a> .	
John Blazekovich Exelon #1,3,5,6	No Do not understand the need for this requirement
This requirement has been dropped from this standard. The data provided by the IA to the RA is addressed in the <a href="#">Coordinate Interchange Standard</a> .	
Compliance Managers	The requirement for data provision/collection/timing and model development, and related compliance measurements and levels of non-compliance should be dealt with through the present working groups that are doing this work.
Although this requirement was dropped from this standard, other requirements for the provision of data have not been dropped because the SAR for this standard includes the following:	
<ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul>	
No – Comments indicating 7 days is not realistic	

**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

Roman Carter So Co Gen 3,5,6 (6 members)	No More time such as 1 month should be considered.
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a '7 day' lead time for data provision – in the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
Alan Boesch NPPD #1	No Seven days prior to energization may be an unrealistic expectation. What type of data will the IA be providing to an associated RA or TOP on new or modified facilities? Will the data originate with the IA? If not the standard should be that the IA pass the data on within a specified period of time, but the requirement to provide the data belongs to the entity that owns the facility. Depending on the type of data you are talking about 7 days might be realistic.
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a '7 day' lead time for data provision – in the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
George Bartlett Entergy Svcs 1	No The IA should provide data when requested, not 7 days prior to energization. Please delete the phrase “no less than 7 days prior to the energization of new facilities or changes to existing facilities” from both the Requirements and the Measures.
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a '7 day' lead time for data provision – in the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
Doug Hils Cinergy #1	No In general I agree with the requirement. Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a '7 day' lead time for data provision – in the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
Kim Warren IMO #2	No Requirement “5” states that the RA has to notify other associated RA’s and TOP’s no less than 7 days prior to energization of new/changed facilities. If the Interchange Authority has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA’s and TOP’s. Therefore I suggest increasing the Interchange Authority time line to 10 days.
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a '7 day' lead time for data provision – in the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
Lee Xanthakos	See comments for requirement 5

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SCE&G #1	<i>{ I agree with the requirement, but I question the value of making a hard 7-day rule. Why not 14 days or 21 days???? }</i>
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a ‘7 day’ lead time for data provision – in the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
<p><b>No – Comments indicating requirement needs more details</b></p>	
<p>Thomas Pruitt Duke #1 Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No</p> <p>Clarification language is necessary. Same as 18, 20, 21 above.</p> <p><i>{The language is not clear enough. For example some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}</i></p> <p><i>{The language is not clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data – from testing, real-time operation, engineering specifications, manufacturer’s specifications, etc.}</i></p> <p><i>{Until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined. In general there should be at least two levels of non-compliance identified.}</i></p>
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a ‘7 day’ lead time for data provision. In the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p> <p>The standards development process does not require more than one level of non-compliance.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>It is not clear whether the IA must supply this data to any requesting RA or just of the RA that has jurisdiction over the IA’s area. We propose that the IA should only have to supply this information to his RA. Other RA’s should contact the IA’s RA for the information.</p> <p>We suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13.</p>
<p>This requirement has been dropped from this standard.</p> <p>The intent of the similar requirements is to provide data to any RA that monitors an entity’s facilities.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>This is too vague – provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.</p> <p>The industry will need to change its current business practices in order to comply with requirement</p>



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<p>This requirement has been dropped from this standard.</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p> <p>The data is being specified by the RA that monitors facilities – the entity with the facility or with facility status must supply the data.</p> <p>The revised standard does not include any specific references to a ‘7 day’ lead time for data provision. In the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
<p>Kim Warren IMO #2</p>	<p>No</p> <p>Requirement “5” states that the RA has to notify other associated RA’s and TOP’s no less than 7 days prior to energization of new/changed facilities. If the Interchange Authority has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA’s and TOP’s. Therefore I suggest increasing the Interchange Authority time line to 10 days.</p>
<p>This requirement has been dropped from this standard.</p> <p>The revised standard does not include any specific references to a ‘7 day’ lead time for data provision. In the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p>	
<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1,3,6  ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>Change the Requirement from ‘providing specified data no less than 7 days prior to the energization of new facilities’ to ‘providing specified data prior to the energization of new facilities’.</p> <p>Not sure if ‘shall provide data as specified by an (associated ) Reliability Coordinator’ means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the IA can request the data. The standard needs to be clear on which meaning is correct.</p> <p>Change ‘industry accepted format, timeframe, and technically accurate and complete’ to ‘industry accepted format, accurate and complete’. Timeframe is already specified in the standard. It doesn’t need to be repeated. Delete the description of ‘technically’.</p>
<p>This requirement was dropped from this standard.</p> <p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p> <p>Specific references to ‘energization of new facilities’ have been dropped from the revised standard.</p> <p>The standard has been revised to clarify that the entities must provide data to the entity (performing the RA function) with which it has a reliability relationship.</p> <p>As suggested, the standard was revised to omit the phrase, ‘industry accepted format’ and to omit the adjective, ‘technically.’ There is no difference between accurate data and technically accurate data.</p>	
<p><b>No – Comments indicating additional details needed in requirements</b></p>	
<p>Joseph Buch Madison #4</p>	<p>No</p> <p>See comments on question 26.</p> <p><i>{ The standard does not spell out the “data” required. There are certain key items which at a minimum are necessary to perform reliability analysis. These should be enumerated and a part of this standard. See further comments in questions 14 and 47.}</i></p>

## Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

<p>There is another requirement in this standard that charges the RA with responsibility for prescribing what data is needed. NERC will not produce a standard list of data to be supplied, since the data needed varies from one RA to another RA.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?</p>
<p>This requirement was dropped from this standard. As suggested, the standard was revised to omit the adjective, 'technically.' There is no difference between accurate data and technically accurate data.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>No It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.</p>
<p>This requirement was dropped from this standard. The IA does not have any facility data to provide to the RA. Interchange data is addressed in the Coordinate Interchange standard.</p>	
<p>Gregory Campoli NY ISO #2 David Kiguel Hydro One #1</p>	<p>No This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities such as engineering data.</p>
<p>This requirement was dropped from this standard. The IA does not have any facility data to provide to the RA. Interchange data used in conducting reliability assessments is addressed in the Coordinate Interchange standard.</p>	
<p>Alan Johnson Mirant #6</p>	<p>No Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?</p>
<p>This requirement was dropped from this standard. The IA does not have any facility data to provide to the RA.</p>	
<p><b>No – Comments suggestion changing the scope of the requirement</b></p>	
<p>Bob Burkard NCMPA1 # 3,4,5</p>	<p>No Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.</p>
<p>This requirement was dropped from this standard. The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA. The RA may choose to address emergency changes in its data specification, but requiring such a provision is beyond the scope of this standard.</p>	
<p>Fred Frederick Vectren #3</p>	<p>No</p>
<p><b>Yes – Comments about 7 days</b></p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes/No Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The timeframe requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.</p>

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<p>This requirement was dropped from this standard.</p> <p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes</p> <p>See comment in #18.</p> <p><i>{ Manitoba Hydro questions the 7 day period specified. Some processes would require significantly more lead time than that while some require less; how was the 7 day time chosen. The issue is one of supplying data on a timely basis. Isn't that covered by another requirement.}</i></p>
<p>This requirement was dropped from this standard.</p> <p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p>	
<p><b>Yes – comments about appropriateness of this requirement</b></p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes</p> <p>See # 18 comments.</p> <p><i>{A seven day lead time may not, in many cases, be sufficient lead time to incorporate new facilities or changes to existing facilities in models or perform revised analysis. There should also be a requirement to provide data in real time with measures related to timeliness and accuracy.}</i></p> <p>Also, is this requirement #7 necessary? What facilities, (lines, generators, etc.), will an Interchange Authority have that requires energization?</p>
<p>This requirement was dropped from this standard.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes</p> <p>The language "no less than 7 days prior to the energization of new facilities or changes to existing facilities" is not relevant to IA data, since the IA is not normally involved with new facilities and the data requested from a IA is very different than from the other functions.</p>
<p>This requirement was dropped from this standard.</p>	
<p><b>Yes – comments suggesting expansion of requirement</b></p>	
<p>Richard Schwarz PNSC #2</p>	<p>Yes</p> <p>This requirement should be for any data request, not just for new or revised facilities. Should pertain to all facilities. The timeframe should be specified by the RA in accordance with its own needs.</p>
<p>This requirement was dropped from this standard. The requirement that addresses the RA's data requests was modified to reflect this suggestion. The revised standard addresses all data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within interconnection reliability operating limits.</p>	

**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Ed Riley CA ISO #2 James Stanton Calpine #5 Joe Minkstein PG&E #5 Karl Kohlrus CWL&P #5 Lee Westbrook Oncor #1 Mike Miller Southern Co #1 Stuart Goza TVA #1 William Smith Allegheny Pwr #1	Yes
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**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

**23. Requirement 7 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Not Applicable</li> <li>2. Not Applicable</li> <li>3. Not Applicable</li> <li>4. Data for new/revised facilities was not provided as requested</li> </ol>
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<p><b>Revised Levels of Non-compliance: None</b></p>
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**Summary Consideration:**

Several commenters indicated that the IA does not have any facility data to provide to the RA that is needed for real time monitoring or analyses – other than the data already addressed in other standards. Consequently Requirement 7 was dropped from the revised standard.

Comments that provided specific suggestions for improvements to the levels of non-compliance have been considered for their application to Requirements 5, 8 and 9

<b>No – Comments restating that requirement is inappropriate</b>	
Francis Halpin BPA Bus Line #5,6	No IA's do not normally have the information referred to in the requirements.
Agreed. This requirement was dropped from the standard.	
FRCC 6-#1, 4-#2, 1-#2	No Can not comment on this as we believe the requirement for the IA is not accurate.
Agreed. This requirement was dropped from the standard.	
Sam Jones ERCOT #2	See comments to #22 above. { This Requirement makes no sense. The IA authorizes next-hour bilateral Transactions and Market dispatch that are ready for physical implementation.}
Agreed. This requirement was dropped from the standard.	
<b>No – Comments indicating addressing non-compliance is premature</b>	
Todd Lucas (6?) Southern Co #1	No Until numbers 18, 20, & 22 are resolved the levels of non-compliance cannot be determined.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Gregory Campoli NY ISO #2	No It is premature to develop compliance levels at this time.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Susan Morris	In general there should be at least two levels of non-compliance identified.

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SERC #2	
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p><b>No – Comments indicating more details needed</b></p>	
<p>Thomas Pruitt Duke #1 Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>See 22. <i>{The language is not clear enough. For example some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}</i>  <i>{The language is not clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data – from testing, real-time operation, engineering specifications, manufacturer's specifications, etc.}</i>  <i>{Until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined. In general there should be at least two levels of non-compliance identified.}</i></p>
<p>This requirement has been dropped from this standard.  The revised standard does not include any specific references to a '7 day' lead time for data provision. In the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.  The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area's interconnection reliability operating limits.  The standards development process does not require more than one level of non-compliance.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?</p>

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<p>This requirement has been dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs.</p>	
<p><b>No – Comments with specific wording recommendations</b></p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Levels of non-compliance would be better if defined something like:</p> <ul style="list-style-type: none"> <li>(6 Data for new/revised facilities was provided less than seven days prior to energization.</li> <li>(6 Data for new/revised facilities was provided before one month after but not before energization.</li> <li>(6 Data for new/revised facilities was provided before three months but not before one month after energization.</li> <li>4. Data for new/revised facilities was not provided within three months after energization.</li> </ul>
<p>This requirement has been dropped from this standard.</p> <p>The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The corresponding requirement for the RA to specify what data it needs was changed to allow each RA the flexibility to assign its own 'due date', so adopting these recommended levels of non-compliance is no longer appropriate.</p> <p>The result of all of these is the same – the RA doesn't have the data it needs to accurate assess the system.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>See comments for requirement 5</p> <p><i>{ I agree with the requirement, but I question the value of making a hard 7-day rule. Why not 14 days or 21 days???? }</i></p>
<p>This requirement has been dropped from this standard.</p> <p>In the revised standard, all references to '7 days' have been dropped. The revised standard requires the RA to specify the time frame for providing it with the data it needs.</p>	
<p>Karl Kohlrus CWL&amp;P #5</p>	<p>No</p> <p>There should be a reminder sent out if the data is not sent initially before going directly to Level 4.</p>
<p>This requirement has been dropped from this standard.</p> <p>Each entity must assume responsibility for meeting its own requirements. The suggestion that a reminder be sent out has not been adopted.</p>	
<p><b>No – Comments indicating # of levels of non-compliance need adjustments</b></p>	
<p>Alan Johnson Mirant #6</p>	<p>No</p> <p>Not sure that non-compliance should jump right to level 4</p>
<p>This requirement has been dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
<p>Alan Boesch</p>	<p>The level of non-compliance does not seem appropriate. Starting at level one</p>

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NPPD #1	and then escalate up through the the different levels depending on how late it is seems to be more appropriate.
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
Joseph Buch Madison #4	<p>No</p> <p>See comments on question 27.</p> <p><i>{ There is only 1 level of non-compliance, level 4 and no definition of the data required. If certain key items of "data" were defined as part of the standard and they were not provided, a level 4 non-compliance would be appropriate. If these items were provided, however they were only provided 2 days before energization a level 3 non-compliance might be appropriate. Similarly, if the data on the key items were provided 3 to 7 days before energization a level 2 non-compliance might be appropriate. See further comments in question 47.}</i></p>
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating within interconnection reliability operating limits.</p> <p>This standard will not define specifically what data must be provided. Data requirements vary from RA to RA and under the proposed standard, each RA must decide what data it needs and must specify that data.</p>	
George Bartlett Energy Svcs 1	<p>No</p> <p>There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".</p>
<p>This requirement was dropped from this standard.</p> <p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs. It would be very difficult to determine that the lack of data, by itself, resulted in operating outside an IROL – for this reason the suggestion was not implemented.</p>	
<p><b>No – Other Comments</b></p>	
Ed Riley CA ISO #2	<p>No</p> <p>The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	



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John Blazekovich Exelon #1,3,5,6 Fred Frederick Vectren #3 Albert M. DiCaprio MAAC #2 Tony Jankowski We-Energies #4 Richard Kafka Pepco #1	No
Richard Schwarz PNSC #2	Yes Should pertain to all facilities
<p><a href="#">This requirement was dropped from this standard.</a>  <a href="#">The standard was revised so that all references to 'new/revised facilities' were dropped.</a></p>	
Toni Timberman BPA #1	Yes delete new/revised facilities
<p><a href="#">This requirement was dropped from this standard.</a>  <a href="#">The standard was revised so that all references to 'new/revised facilities' were dropped.</a></p>	
Bob Burkard NCMPIA1 # 3,4,5 Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 ECAR Ops Pane #1 – 8 #5 – 1 #2 – 2 Ed Stein Firstenergy Sol #6 Gerald Rheault Manitoba #1,3,5,6 James Stanton Calpine #5 Joanne Borrell FirstEnergy Sol #3 Joe Minkstein PG&E #5 Kathleen Goodman ISO NE #2 Kim Warren IMO #2 Mike Miller Southern Co #1 Ray Morella FirstEnergy #1 Roman Carter So Co Gen 3,5,6 (6 members) Stuart Goza TVA #1 Tom Petrich (5) PG&E #1 Vern Colbert Dominion #1 William Smith Allegheny Pwr #1	Yes

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**24. Requirement 8 – Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Original Requirement**

The Transmission Owner (TOW) shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

**Measure(s)**

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

**Outcome(s)**

The TOW shall provide data, as requested, to its (associated) RA and/or TOP.

**Revised Requirement**

Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.

- Generator operator
- Generator owner
- Reliability authority
- Transmission operator
- Transmission owner

**Measure(s)**

The entity responsible shall provide data, as specified, to the requesting reliability authority, within the time frame specified, in the mutually agreed upon format.

**Summary Consideration:**

Based on the comments submitted, this requirement has been revised to eliminate the requirement that data be provided to the TOP. Clarifying language was added to indicate which RA should be provided the data. The '7 days prior to energization' phrase has been replaced with language that indicates data must be provided as specified by the RA and within the timeframe specified.

The corresponding requirement for the RA was modified to indicate that the RA must specify what data it needs and must distribute the specification to entities with facilities monitored by the RA and to entities that provide facility status to the RA.

The term, 'technically accurate' was modified to say, 'accurate.'

The Outcomes section was redundant and was eliminated. The term, 'industry accepted format' was replaced with 'mutually agreed upon format' based on the industry's comments.

This requirement was combined with the similar requirements that indicated the RA, TOP, Generator Operator and Generator Owner must provide data. The revised requirement is called, 'Data Provision'.

**No – Comments indicating requirement is inappropriate**

Tony Jankowski  
We-Energies #4

No  
The RA/TOP should already have all required data as stated in Requirement #3

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	and Requirement #4.
Requirements 3 and 4 require that the RA/TOP specify what data is needed. This requirement is aimed at ensuring that the needed data is provided.	
Compliance Managers	The requirement for data provision/collection/timing and model development, and related compliance measurements and levels of non-compliance should be dealt with through the present working groups that are doing this work.
The SAR for this standard includes the following:	
<ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul>	
No – Comments about 7 days	
George Bartlett Entergy Svcs 1	No The TOW should provide data when requested, not 7 days prior to energization. Please delete the phrase “no less than 7 days prior to the energization of new facilities or changes to existing facilities” from both the Requirements and the Measures.
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
Doug Hils Cinergy #1	No In general I agree with the requirement. Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
Lee Xanthakos SCE&G #1	See comments for requirement 5 <i>{ I agree with the requirement, but I question the value of making a hard 7-day rule. Why not 14 days or 21 days???? }</i>
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
Bob Burkard NCMPA1 # 3,4,5	No Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA. The RA may choose to address emergency changes in its data specification, but requiring such a provision is beyond the scope of this standard.	
Alan Boesch NPPD #1	No Depending on the type of data seven days prior to energization may be a unrealistic expectation.
The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
Vern Colbert Dominion #1	No Seven days is not enough time.

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<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>No Again, more time such as 1 month is more appropriate.</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No 7 days is too short a period for evaluation of system impacts.</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the data must be provided within the timeframe specified by the RA.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>No See #18 comments. <i>{ A seven day lead time may not, in many cases, be sufficient lead time to incorporate new facilities or changes to existing facilities in models or perform revised analysis. There should also be a requirement to provide data in real time with measures related to timeliness and accuracy. }</i></p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA. The RA is expected to stipulate different time frames for providing different types of data.</p>	
<p><b>No – Comments asking for an expansion of the requirements</b></p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No This requirement should not just focus on new facilities or changes to existing facilities. As we have stated for the TOP, the TOW should have requirements for providing the data to the RA as specified by the RA and in the timeframe the RA needs.</p>
<p>Specific references to 'new or changed facilities' have been removed from this standard. The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided as specified and within the timeframe specified by the RA.</p>	
<p><b>No – Comments asking for greater clarity in the requirements</b></p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No It is not clear whether the TOW must supply this data to any requesting RA or just to the RA that has jurisdiction over the TOW's area. We propose that the TOW should only have to supply this information to his RA. Other RA's should contact the TOW's RA for the information.  Why 7 days? If the intent is to ensure the requestor knows about the new facilities and can update their model before energization of the new facilities, then more than 7 days notice should be required. If the intent is to ensure the requestor is receiving the real-time data associated with the new facilities, then 7 days may be adequate.  We suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13.  <i>{ If the requirement was changed to the TOP providing real time data, equipment limits, and model updates to their RA as specified by their RA, then the levels of</i></p>

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	<p><i>non-compliance could be:</i></p> <p>6 <i>Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for up to 24 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i></p> <p>6 <i>Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 24-36 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i></p> <p>6 <i>Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 36-48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i></p> <p>6 <i>Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period greater than 48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant), or</i></p> <p><i>the TOP did not station personnel at the Station or Plant as directed by the RA to provide this data while telemetry was being restored, or the TOP did not provide equipment limits as requested, or The TOP did not provide modeling update information until after the energization of new facilities.</i></p> <p><i>Note: the idea is that depending on system conditions, the RA may be able to rely on their previous operational planning analysis (next day analysis) for a day or so. However, if system conditions warrant, the RA should have the authority to direct the TOP to man the station and if the TOP refuses that should be considered a significant infraction.</i></p> <p><i>Need to define “surrogate value” and “surrogate data”.</i>}</p>
	<p>This requirement was revised to clarify that the TOP must provide this data to the RA with which it has a reliability relationship – this would be the RA that has authority over the TOP.</p> <p>The suggested levels of non-compliance were not adopted because they would be very difficult to objectively measure. The revised standard does require that the RA’s data specification address the data provision process to use when automated real time system operating data is unavailable. This should help ensure that there is a process in place to provide data to the RA when there is a loss of telemetry.</p>
<p>Lloyd Linke MAPP #2</p>	<p>This is too vague – provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.</p> <p>The industry will need to change its current business practices in order to comply with requirement.</p>
	<p>There is a separate requirement in this standard that addresses the type of data to provide to the RA. Please reference the revised requirement now called, “Data Specification &amp; Collection.” The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p> <p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided as specified and within the timeframe specified by the RA.</p>
<p>Guy Zito (See List)</p>	<p>No</p>

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<p>NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer’s data, etc.</p>
<p>There is a separate requirement in this standard that addresses the type of data to provide to the RA. Please reference the revised requirement now called, “Data Specification &amp; Collection.”</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities such as engineering data.</p>
<p>There is a separate requirement in this standard that addresses the type of data to provide to the RA. Please reference the revised requirement now called, “Data Specification &amp; Collection.”</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p>	
<p>Alan Johnson Mirant #6</p>	<p>No Agree conceptually, but need some clarification as to what is meant by “...changes to existing facilities”. What types of changes are intended here?</p>
<p>References to ‘changes to facilities’ have been dropped from the revised standard. The requirement for the RA has been clarified to indicate that the RA must specify the data it needs from entities with facilities monitored by the RA and from entities that provide facility status to the RA.</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p>	
<p>Thomas Pruitt Duke #1 Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No See 22. {The language is not clear enough. For example some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}  {The language is not clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data – from testing, real-time operation, engineering specifications, manufacturer’s specifications, etc.}  {Until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined. In general there should be at least two levels of non-compliance identified.}</p>

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<p>The revised standard does not include any specific references to a '7 day' lead time for data provision. In the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area's interconnection reliability operating limits.</p> <p>The standards development process does not require more than one level of non-compliance.</p>	
Joseph Buch Madison #4	<p>No</p> <p>See comments on question 26.</p> <p><i>{ The standard does not spell out the "data" required. There are certain key items which at a minimum are necessary to perform reliability analysis. These should be enumerated and a part of this standard. See further comments in questions 14 and 47.}</i></p>
<p>There is a separate requirement in this standard that addresses the type of data to provide to the RA. Please reference the revised requirement now called, "Data Specification &amp; Collection."</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area's interconnection reliability operating limits.</p> <p>However, this standard will not include a standard list of data to be supplied, since the data needed varies from one RA to another RA.</p>	
<p><b>No – Other Comments</b></p>	
Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5	<p>No</p> <p>The timing of this Requirement conflicts with Requirement 5. This is, the seven days does not leave the RA any time to complete their obligations under Requirement 5.</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
Kim Warren IMO #2	<p>No</p> <p>Requirement "5" states that the RA has to notify other associated RA's and TOP's no less than 7 days prior to energization of new/changed facilities. If the Transmission Owner has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA's and TOP's. Therefore I suggest increasing the Transmission Owners time line to 10 days.</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p><b>No – Mix of comments</b></p>	
Peter Burke ATC #1	<p>No</p> <p>Same responses as provided to Questions 18 &amp; 20.</p> <p><i>{ Three concerns with this requirement:</i></p> <ul style="list-style-type: none"> <li><i>(6 TOP should not make requests, per response to question #16. Rather, the RA should make the requests and then hand that data down to the TOP.</i></li> <li><i>(6 This requirement and the others like it for the BA, IA, Generator and Transmission Owner (TOW) all state that the data should be supplied "as requested". That is needed but there should also be a requirement that RAs, IAs, BAs, Generators and TOWs should supply this information to one</i></li> </ul>

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	<p><i>another, without a request, if the data has to do with major/critical facilities (i.e. an entity may not realize they should make a request.)</i></p> <p>(6) <i>The requirement directs that data must be provided no less than 7 days in advance. Some new facilities can be significant so that 7 days in advance is not enough time for receiving data. In some cases, data for significant new facilities would be needed a season or a year in advance.</i></p> <p>(6) <i>Estimated or approximate data should be acceptable prior to energization. "As built" data would be provided when available or when required telemetry is complete.}</i></p> <p><i>{ Same concerns as expressed in reply to Question 18. One entity may not know it should request information from another entity. There should also be a requirement on the entity where the change is occurring to provide that data, unrequested, to the other entities if it involves major/critical facilities.}</i></p> <p>Some measure needs to be in place to make sure that the RA and TOP are notified in a timely manner that system changes are planned. This would be a challenge to meet initially as the processes are not in place to make this work well now.</p>
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The standard was revised to eliminate the requirement that the data be provided to the TOP.

The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.

The revised standard eliminates the need for the RA to send out individual data requests – instead the RA must develop and distribute a data specification. Entities with facilities monitored by the RA and entities that provide the RA with facility status must provide data as specified.

Specific references to 'facility changes ' have been removed from this standard.

There is a separate requirement in this standard that addresses the type of data to be provided to the RA.

<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>(1) Change the Requirement from 'providing specified data no less than 7 days prior to the energization of new facilities' to 'providing specified data prior to the energization of new facilities'.</p> <p>(2) not sure if 'shall provide data as specified by an (associated ) Reliability Coordinator' means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the TOP can request the data. The standard needs to be clear on which meaning is correct.</p> <p>(3) Change 'industry accepted format, timeframe, and technically accurate and complete' to 'industry accepted format, accurate and complete'. Timeframe is already specified in the standard. It doesn't need to be repeated. Delete the description of 'technically'.</p>
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The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.

Specific references to 'facilities' have been dropped from the revised standard.

The standard has been revised to clarify that the TOP must provide data to the RA with which it has a reliability relationship. The TOP has one RA that it reports to – and the TOP must provide its data to this RA.

As suggested, the standard was revised to omit the adjective, 'technically.' There is no difference between accurate data and technically accurate data.

ECAR Ops Panel	No
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<p>#1 – 8 #5 – 1 #2 – 2</p>	<p>I can just see someone delaying the installation of a needed facility for 7 days because they didn't want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment.</p> <p>What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p> <p>The adjective, 'technically' has been deleted from the revised standard. There is no difference between accurate data and technically accurate data.</p>	
<p>Fred Frederick Vectren #3</p>	<p>No</p>
<p><b>Yes – Comments on 7 days</b></p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes/No</p> <p>Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes</p> <p>See comment in #18</p> <p><i>{ Manitoba Hydro questions the 7 day period specified. Some processes would require significantly more lead time than that while some require less; how was the 7 day time chosen. The issue is one of supplying data on a timely basis. Isn't that covered by another requirement.}</i></p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the specified data must be provided within the timeframe specified by the RA.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>Yes</p> <p>Estimated data that describes equipment should be provided several months in advance of energization so that operational planning studies (12 months in advance) can be performed. Estimated data is probably adequate for the equipment energization provided as-built data is provided within a reasonable amount of time. We suggest one month after energization as a reasonable time frame for providing as-built data. "Estimated" versus "as-built" data should be defined.</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p><b>Yes – Comments on need to expand requirement</b></p>	
<p>Toni Timberman BPA #1</p>	<p>Yes</p> <p>Data provision should not be limited to "the energization of new facilities or changes to existing facilities" and the timeline should be set by the data requestor.</p>
<p>Specific references to 'changes to facilities' have been dropped from the revised standard.</p>	

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Richard Schwarz PNSC #2	Yes This requirement should be for any data request, not just for new or revised facilities. Time frame to be specified by the RA according to its own needs.
<p>Specific references to 'changes to facilities' have been dropped from the revised standard.                  The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
James Stanton Calpine #5 Ed Riley CA ISO #2 Dilip Mahendra SMUD #1 Darrel Richardson Illinois Power #1, 3 Charles Yeung Reliant Energy #6 Albert M. DiCaprio MAAC #2 Joe Minkstein PG&E #5 Karl Kohlrus CWL&P #5 Mike Miller Southern Co #1 Lee Westbrook Oncor #1 Richard Kafka Pepco #1 William Smith Allegheny Pwr #1 Tom Petrich (5) PG&E #1 Stuart Goza TVA #1	Yes

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**25. Requirement 8 – Do you agree with these levels of non-compliance for this requirement?**

<b>Original Levels of Non-compliance</b>	
1.	Not Applicable
2.	Not Applicable
3.	Not Applicable
4.	Data for new/revised facilities was not provided as requested

<b>Revised Levels of Non-compliance</b>	
1.	Not Applicable
2.	Not Applicable
3.	Not Applicable
4.	Data not provided to the reliability authority as specified

**Summary Consideration:**

The fourth level of non-compliance was modified to conform with the language in the revised requirement. The reference to ‘new/revised facilities’ was dropped – the revised requirement addresses the data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits.

Several commenters suggested adding more levels of non-compliance – to give partial credit for having the data a little incorrect, or a little late, in an almost acceptable format, etc. The result of all of these is the same – the RA doesn’t have the data it needs to accurately assess the system. There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA’s ability to monitor and assess the status of the interconnection with respect to operating without exceeding any of its interconnection reliability operating limits. For these reasons, additional levels of non-compliance were not added. The industry will be asked to comment on this decision in the next posting of this standard.

<b>No – Other Comments</b>	
Ed Riley CA ISO #2	No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can’t be objectively measured.	
<b>No – Levels of non-compliance need adjustments</b>	
Doug Hils Cinergy #1	No Model updates are extremely necessary, however there may be times that temporary changes are made to get some equipment back in service by reconfiguring the system. Would there be a violation if that equipment was placed back in service before the 7 day notification took place?
The standard has been revised to remove the firm ‘7 day’ requirement. With the revised standard, the RA must specify an acceptable time frame for providing the data.	
David Kiguel	No

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Hydro One #1	It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.
<p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, "Data Specification &amp; Collection." This requirement clarifies that the data to be provided to the RA is data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p>	
George Bartlett Entergy Svcs 1	<p>No</p> <p>There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs. It would be very difficult to determine that the lack of data, by itself, resulted in operating outside an IROL – for this reason the suggestion was not implemented.</p>	
Francis Halpin BPA Bus Line #5,6	<p>No</p> <p>There should be levels of compliance based upon notification and calaboration with affected parties</p>
<p>These levels of non-compliance must be linked to this requirement. This requirement does not have a notification component. Levels of non-compliance for notification and collaboration would be more appropriate for the requirement that address specifying what data is needed.</p>	
Todd Lucas (6?) Southern Co #1	<p>No</p> <p>Until numbers 18, 20, 22 &amp; 24 are resolved the levels of non-compliance cannot be determined.</p>
<p>The requirements have been modified and the levels of non-compliance have been adjusted to conform with these modifications.</p>	
<p>Thomas Pruitt Duke #1</p> <p>Robert Reed TS (See List)</p> <p>Susan Morris SERC #2</p>	<p>No</p> <p>See 22.</p> <p><i>{The language is not clear enough. For example some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}</i></p> <p><i>{ it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data – from testing, real-time operation, engineering specifications, manufacturer's specifications, etc.}</i></p> <p><i>{Until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined. In general there should be at least two levels of non-compliance identified.}</i></p>

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<p>The revised standard does not include any specific references to a '7 day' lead time for data provision. In the revised standard each RA must specify when it needs data and the entities with the data are required to provide the data within the time frame specified by the RA.</p> <p>The data being addressed here is data the RA needs to support real time monitoring, operational planning analyses and real time assessments of its reliability area conducted relative to operating within its reliability area's interconnection reliability operating limits.</p> <p>The standards development process does not require more than one level of non-compliance.</p>	
<p>Sam Jones ERCOT #2</p>	<p>See comments to #24 above.</p> <p><i>{The timing of this Requirement conflicts with Requirement 5. This is, the seven days does not leave the RA any time to complete their obligations under Requirement 5.}</i></p>
<p>The standard has been revised to remove the firm '7 day' requirement. Instead, the revised standard requires that the RA stipulate when the data must be provided.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Levels of non-compliance would be better if defined something like:</p> <ul style="list-style-type: none"> <li>(6 Data for new/revised facilities was provided less than seven days prior to energization.</li> <li>(6 Data for new/revised facilities was provided before one month after but not before energization.</li> <li>(6 Data for new/revised facilities was provided before three months but not before one month after energization.</li> <li>(6 Data for new/revised facilities was not provided within three months after energization.</li> </ul> <p>There's no desire for penalties that dis-incent people from energizing new equipment but there's need for penalties that encourage early reporting. Not sure that 7 days will be needed once systems are in palce and incremental updates are being performed. There may also be a need for determining the impact of the facility addition to the system before determining penalties. (Should a new 200 MW generator going into service be penalized the same as a distribution tap serving 5 MWs of load? Probably not but this standard as written does not differentiate between the two.)</p>

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<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The corresponding requirement for the RA to specify what data it needs was changed to allow each RA the flexibility to assign its own 'due date', so adopting these recommended levels of non-compliance is no longer appropriate.</p> <p>The result of all of these is the same – the RA doesn't have the data it needs to accurately assess the system.</p> <p>The revised standard clarifies that the RA must specify and collect the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>See comments for requirement 5 <i>{ Seems like there should be more than one level of non-compliance. What if the data was incomplete for example? Shouldn't merit some non-compliance penalty?}</i></p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
<p>Karl Kohlrus CWL&amp;P #5</p>	<p>No There should be a reminder sent out if the data is not sent initially before going directly to Level 4.</p>
<p>Each entity must assume responsibility for meeting its own requirements. The suggestion that a reminder be sent out has not been adopted.</p>	
<p>Joseph Buch Madison #4</p>	<p>No See comments on question 27. <i>{ There is only 1 level of non-compliance, level 4 and no definition of the data required. If certain key items of "data" were defined as part of the standard and they were not provided, a level 4 non-compliance would be appropriate. If these items were provided, however they were only provided 2 days before energization a level 3 non-compliance might be appropriate. Similarly, if the data on the key items were provided 3 to 7 days before energization a level 2 non-compliance might be appropriate. See further comments in question 47.}</i></p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>This standard will not define specifically what data must be provided. Data requirements vary from RA to RA and under the proposed standard, each RA must decide what data it needs and must request that data.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>No Level of non-compliance should be tied to the impact of changes to the system. As stated the level of non-compliance is equal for major and minor changes in transmission system configuration, levels of non-compliance should recognize the difference. Non compliance should be tied to the standard time frame for supplying data. Data maintenance is an on-going activity, the drafting team should recognize and address data maintenance and compliance implementation.</p>

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<p>This standard is only addressing a subset of the data that must be exchanged between entities. There were many commenters who objected to a standard time frame for supplying data, and that requirement has been modified to allow the RA to identify the time frame for supplying data. This should allow each RA to identify a time frame that is appropriate.</p> <p>The standard was revised to shift the focus from data relative to new or changed facilities to all data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No It is premature to develop compliance levels at this time.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No The level of non-compliance does not seem appropriate. Starting at level one and then escalate up through the the different levels depending on how late it is seems to be more appropriate.</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p>	
<p>Tony Jankowski We-Energies #4 Fred Frederick Vectren #3</p>	<p>No</p>
<p>Richard Schwarz PNSC #2</p>	<p>Yes Should pertain to all facilities</p>
<p>Agreed – and this suggestion was adopted and is reflected in the revised standard. The data can be any data that is requested by the RA that is needed to support real time monitoring and analyses relative to the IROL's under the RA's control.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes delete "for new/revised facilities"</p>
<p>This suggestion has been adopted and is reflected in the revised standard.</p>	

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<p>Alan Johnson Mirant #6          Albert M. DiCaprio MAAC #2          Bob Burkard NCMAPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2          Ed Stein Firstenergy Sol #6          Gerald Rheault Manitoba #1,3,5,6          James Stanton Calpine #5          Joanne Borrell FirstEnergy Sol #3          Joe Minkstein PG&amp;E #5          Kathleen Goodman ISO NE #2          Kim Warren IMO #2          Mike Miller Southern Co #1          Ray Morella FirstEnergy #1          Richard Kafka Pepco #1          Roman Carter So Co Gen 3,5,6 (6 members)          Stuart Goza TVA #1          Tom Petrich (5) PG&amp;E #1          Vern Colbert Dominion #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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### 26. Requirement 9 – Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Original Requirement

The Generator Owner shall provide data, as specified by an (associated) Reliability Authority (RA) and/or Transmission Operator (TOP), no less than 7 days prior to the energization of new facilities or changes to existing facilities

#### Measure(s)

Provide specified data, as requested (industry accepted format, timeframe, and technically accurate and complete), to the requesting RA or TOP, no less than 7 days prior to the energization of new facilities or changes to existing facilities.

#### Outcome(s)

The Generator Owner shall provide data, as requested, to its (associated) RA and/or TOP.

#### Revised Requirement

Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.

- Generator operator
- Generator owner
- Reliability authority
- Transmission operator
- Transmission owner
- Measure(s)

The entity responsible shall provide data, as specified, to the requesting reliability authority, within the time frame specified, in the mutually agreed upon format.

#### Summary Consideration:

Based on the comments submitted, this requirement has been revised to eliminate the requirement that data be provided to the TOP. Clarifying language was added to indicate which RA should be provided the data. The '7 days prior to energization' phrase has been replaced with language that indicates data must be provided as specified by the RA and within the timeframe specified.

The corresponding requirement for the RA was modified to indicate that the RA must specify what data it needs and must distribute the specification to entities with facilities monitored by the RA and to entities that provide facility status to the RA.

The term, 'technically accurate' was modified to say, 'accurate.'

The Outcomes section was redundant and was eliminated.

The term, 'industry accepted format' was replaced with 'mutually agreed upon format' based on the industry's comments.

This requirement was combined with the similar requirements that indicated the RA and Generator Operator, Transmission Operator and Transmission Owner must provide data. The revised requirement is called, 'Data Provision'.

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<b>No – Comments about 7 days</b>	
Bob Burkard NCMPA1 # 3,4,5	No Emergency changes to existing facilities should be exempted with a requirement to coordinate with the above entities.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA. The RA may choose to address emergency changes in its data specification, but requiring such a provision is beyond the scope of this standard.	
Alan Boesch NPPD #1	No Depending on the type of data seven days prior to energization may be a unrealistic expectation.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
Roman Carter So Co Gen 3,5,6 (6 members)	No More time such as 1 month is more appropriate.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
Vern Colbert Dominion #1	No Seven days is not enough time.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
George Bartlett Entergy Svcs 1	No The Generator Owner should provide data when requested, not 7 days prior to energization. Please delete the phrase "no less than 7 days prior to the energization of new facilities or changes to existing facilities" from both the Requirements and the Measures.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA. This was deleted from both the requirement and the associated measures as suggested.	
Francis Halpin BPA Bus Line #5,6	No Is 7 days the appropriate time frame for data submittal?? Does it allow sufficient time for proper analysis of the impact on the system? Seems like the data needs to be submitted in the time frame of weeks before energization in order to do system studies. Six months may be required, in some cases at least.
The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.	
<b>No – Comments indicating additional clarity is needed</b>	
Joseph Buch Madison #4	No The standard does not spell out the "data" required. There are certain key items which at a minimum are necessary to perform reliability analysis. These should be enumerated and a part of this standard. See further comments in questions 14

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	<p>and 47.</p> <p><i>{ The “data” that is to be requested is not defined. As part of this standard one should be able to initially define a handful of key data elements that are required. These key elements would include the minimum information required to support reliability analyses. See question 47 for additional comments.}</i></p> <p><i>{ This standard requires generator owners to supply data as requested to the requesting RA or TOP no less than 7 days prior to energization of new facilities or changes to existing facilities with a level 4 non-compliance if this data is not provided. This is not acceptable. The standard does not spell out the data required, it is left up to the RA or TOP to determine. Some data such as winter ratings is not crucial to system operation and associated level 4 non-compliance along with the sanctions for this level of non-compliance is simply not appropriate. What may be acceptable is to classify non-compliance with this standard as written as level 1. A future revision to this standard including an itemized listing of the specified data could then be developed along with appropriate levels of non-compliance. For example, generator data for dynamic stability provided between 5 and 7 days before energization could be given a level 1 non-compliance.}</i></p>
<p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, “Data Specification &amp; Collection.” This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p> <p>This standard will not include a standard list of data to be supplied, since the data needed varies from one RA to another RA.</p> <p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>This is too vague – provide what data? Who is receiving and providing required data should also be clarified. Is this just tied to telemetry, or is it more broad than that? Depending on what data this is, 7 days may be too short.</p> <p>The industry will need to change its current business practices in order to comply with requirement.</p>
<p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, “Data Specification &amp; Collection.” This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p> <p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p>James Stanton Calpine #5</p>	<p>No</p> <p>What kinds of “changes” to facilities are we talking about? If this is defined somewhere else it should be included here. If it is not defined, it should be.</p>
<p>Specific references to ‘changes to facilities’ have been removed from this standard.</p> <p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, “Data Specification &amp; Collection.” This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits.</p> <p>This standard will not include a standard list of data to be supplied, since the data needed varies from one RA to another RA.</p>	

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<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>No It is not clear what type of data is being referred to in this requirement and clarification is needed if it is data derived from testing or some realtime operation or if it is engineering data, manufacturer's data, etc.</p>
<p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, "Data Specification &amp; Collection." This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p>	
<p>David Kiguel Hydro One #1</p>	<p>No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No This requirement is unclear. There is confusion as to the type of data. We agree if we assume that this requirement is for operational/scheduling information for performing a reliability assessment for operations planning. This does not work for data being provided for the first time from new facilities such as engineering data.</p>
<p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, "Data Specification &amp; Collection." This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p>	
<p>Alan Johnson Mirant #6</p>	<p>No Agree conceptually, but need some clarification as to what is meant by "...changes to existing facilities". What types of changes are intended here?</p>
<p>Specific references to 'changes to existing facilities' have been removed from this standard. There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, "Data Specification &amp; Collection." This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p>	
<p>Susan Morris SERC #2 Thomas Pruitt Duke #1 Todd Lucas (6?) Southern Co #1 Robert Reed TS (See List)</p>	<p>No Clarification language is necessary. Same as 18, 20, 21, 22 above. <i>{The language is not clear enough. For example some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}</i> <i>{The language is not clear enough. See number 18 comments, it is not apparent the types of data being referred to in this requirement. Clarification is needed to specify the required data – from testing, real-time operation, engineering specifications, manufacturer's specifications, etc.}</i> <i>{Until numbers 18 and 20 are resolved (clarification of language) the levels of non-compliance cannot be determined. In general there should be at least two levels</i></p>

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	<i>of non-compliance identified.}</i>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that the requested data must be provided within the timeframe specified by the RA.</p> <p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, "Data Specification &amp; Collection." This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p> <p>The standards development process does not require more than one level of non-compliance.</p>	
Roger Green Southern Co #5	<p>Cannot properly evaluate until data requirements are specified.</p> <p>Is it practical for all parties to meet the 7 day data turn around requirements (see Requirements 5-9)? The common time frame indicates the data may have to be submitted by the facility owner to all parties.</p>
<p>There is a separate requirement in this standard that addresses the type of data to be provided to the RA. Please reference the revised requirement now called, "Data Specification &amp; Collection." This requirement clarifies that the RA is collecting the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p> <p>This standard will not include a standard list of data to be supplied, since the data needed varies from one RA to another RA.</p> <p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p><b>No – Comments indicating expansion of requirement is needed</b></p>	
FRCC 6-#1, 4-#2, 1-#2	<p>No</p> <p>This requirement should not just focus on new facilities or changes to existing facilities. As we have stated for the TOP, the generation owner should have requirements for providing the data to the RA as specified by the RA and in the timeframe the RA needs.</p>
<p>These suggestions were adopted and are reflected in the revised standard.</p>	
<p><b>No – Other comments</b></p>	
Compliance Managers	<p>The requirement for data provision/collection/timing and model development, and related compliance measurements and levels of non-compliance should be dealt with through the present working groups that are doing this work.</p>
<p>The SAR for this standard includes the following:</p> <ul style="list-style-type: none"> <li>Collect data needed for performing real time reliability analyses</li> </ul>	
Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5	<p>No</p> <p>The timing of this requirement conflicts with Requirement 5. That is the seven days does not leave the RA any time to complete their obligations under requirement 5.</p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
Tony Jankowski We-Energies #4	<p>No</p> <p>The RA/TOP should already have all required data as stated in Requirement #3 and Requirement #4.</p>

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<p>Requirements 3 and 4 require that the RA/TOP specify what data is needed. This requirement is aimed at ensuring that the requested data is provided.</p>	
<p>Kim Warren IMO #2</p>	<p>No Requirement “5” states that the RA has to notify other associated RA’s and TOP’s no less than 7 days prior to energization of new/changed facilities. If the Generator Owner has the same time line requirement and gives the minimum notice (7 days) this does not allow time for the RA to complete their requirements of passing on the information to the associated RA’s and TOP’s. Therefore I suggest increasing the Generator Owners time line to 10 days.</p>
<p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p>No – Mix of comments</p>	
<p>Ray Morella Ed Stein Joanne Borrell FirstEnergy #1,3,6  ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No (1) Change the Requirement from ‘providing specified data no less than 7 days prior to the energization of new facilities’ to ‘providing specified data prior to the energization of new facilities’. (2) I’m not sure if ‘shall provide data as specified by an (associated ) Reliability Coordinator’ means that any Reliability Coordinator can request the data or that only the Reliability Coordinator that has jurisdiction over the area operated by the Generation Owner can request the data. The standard needs to be clear on which meaning is correct. (3) Change ‘industry accepted format, timeframe, and technically accurate and complete’ to ‘industry accepted format, accurate and complete’. Timeframe is already specified in the standard. It doesn’t need to be repeated. Delete the description of ‘technically’.</p>
<p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA. The standard was revised to replace “associated RA and/or Transmission Operator (TOP),” with “the reliability authority with which it has a reliability relationship.” The adjective, “technically” was deleted.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No I can just see someone delaying the installation of a needed facility for 7 days because they didn’t want to get a non-compliance. There was not complete agreement on this comment. Seven companies voted in favor of this comment. One company voted against this comment.  What is the difference between accurate data and technically accurate data? Is technically accurate data better than accurate data? Is technically accurate data different than accurate data?</p>
<p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA. The adjective, “technically” was deleted.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No It is not clear whether the Generator Owner must supply this data to any requesting RA/TOP or just to the RA/TOP that has jurisdiction over the Generator. We propose that the Generator should only have to supply this information to his RA and TOP that he is connected to. Other RA’s should contact the Generator Owner’s RA for the information.</p>

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	<p>Why 7 days? If the intent is to ensure the requestor knows about the new facilities and can update their model before energization of the new facilities, then more than 7 days notice should be required. If the intent is to ensure the requestor is receiving the real-time data associated with the new facilities, then 7 days may be adequate.</p> <p>We suggest this requirement be changed similar to our comments provided on Requirement #2 under our response to question #13.</p> <p><i>{ If the requirement was changed to the TOP providing real time data, equipment limits, and model updates to their RA as specified by their RA, then the levels of non-compliance could be:</i></p> <ol style="list-style-type: none"> <li><i>(1) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for up to 24 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i></li> <li><i>(2) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 24-36 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i></li> <li><i>(3) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period of 36-48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant).</i></li> <li><i>(4) Actual TOP telemetered data specified is not be provided by the TOP to the RA and the RA determines that the loss of the data prevents the RA from performing a reliability analysis or ensuring the system is operating within system operating limits for a period greater than 48 hrs and no provision was made by the TOP to manually supply the data (i.e. by staffing the station or plant), or the TOP did not station personnel at the Station or Plant as directed by the RA to provide this data while telemetry was being restored, or the TOP did not provide equipment limits as requested, or The TOP did not provide modeling update information until after the energization of new facilities.</i></li> </ol> <p><i>Note: the idea is that depending on system conditions, the RA may be able to rely on their previous operational planning analysis (next day analysis) for a day or so. However, if system conditions warrant, the RA should have the authority to direct the TOP to man the station and if the TOP refuses that should be considered a significant infraction.</i></p> <p><i>Need to define “surrogate value” and “surrogate data”.</i>}</p>
	<p>The standard was revised to replace “associated RA and/or Transmission Operator (TOP),” with “the reliability authority with which it has a reliability relationship. This change supports your suggestion that the Generator only provide data to the RA it is connected to.</p> <p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn’t have the data it needs to accurately assess the system with respect to its IROLs.</p>
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Same responses as provided to Questions 18 &amp; 20.</p> <p><i>{ Levels of non-compliance would be better if defined something like:</i></p>

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	<p>(6 <i>Data for new/revised facilities was provided less than seven days prior to energization.</i></p> <p>(6 <i>Data for new/revised facilities was provided before one month after but not before energization.</i></p> <p>(6 <i>Data for new/revised facilities was provided before three months but not before one month after energization.</i></p> <p>1. <i>Data for new/revised facilities was not provided within three months after energization.</i>.)</p> <p>{ <i>Why do we go straight to level 4? Is it assumed that things are already working properly and that the penalty is being applied due to a lapse? If there are fines for non-compliance, are people incented to avoid paying fines by not energizing new equipment that's needed for reliability?</i></p> <p><i>Levels of non-compliance would be better if defined something like:</i></p> <p>(6 <i>Data for new/revised facilities was provided less than seven days prior to energization.</i></p> <p>(6 <i>Data for new/revised facilities was provided before one month after but not before energization.</i></p> <p>(6 <i>Data for new/revised facilities was provided before three months but not before one month after energization.</i></p> <p>4.<i>Data for new/revised facilities was not provided within three months after energization.</i>.)</p> <p>Some measure needs to be in place to make sure that the RA and TOP are notified in a timely manner that system changes are planned. This would be a challenge to meet initially as the processes are not in place to make this work well now.</p>
	<p>The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. The corresponding requirement for the RA to specify what data it needs was changed to allow each RA the flexibility to assign its own 'due date', so adopting these recommended levels of non-compliance is no longer appropriate.</p> <p>The result of all of these is the same – the RA doesn't have the data it needs to accurately assess the system.</p> <p>The standard was revised so the RA must develop and distribute a data specification – entities that receive the data specification are required to provide data, as specified, without the need for individual data requests. This should address your concern that there may be situations where the RA doesn't know about planned system changes.</p>
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes/No</p> <p>The term Generator Owner has not been defined anywhere. There may be cases where, depending upon the Agreements in-place, that the actual owner of a generator is not responsible for providing anything but, rather, a third party performs this function on their behalf.</p> <p>Seven days advanced notice may not be feasible for updates to real-time (EMS) systems due to the impact to operations during 'cut-over' activities. The time-frame requirement may vary widely depending on database requirements, support staffing, impact to real-time operations, etc. We believe the timing should be left to the RAs.</p>



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<p>The Functional Model is currently being revised to include a definition of Generator Owner. The Generator Owner is the entity that owns the generator. If a generator owner has an agreement in place that requires another entity to provide data to the RA, then this does not exempt the Generator Owner from complying with the requirements in this standard. If the data were not provided as required, the Generator Owner would be found non-compliant and it would be up to the Generator Owner to seek relief from the entity that should have provided the data under their agreement.</p> <p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
Fred Frederick Vectren #3	No
<p><b>Yes – Comments about 7 days</b></p>	
Lee Xanthakos SCE&G #1	See comments for requirement 5 { I agree with the requirement, but I question the value of making a hard 7-day rule. Why not 14 days or 21 days????}
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
John Blazekovich Exelon #1,3,5,6	Yes Estimated data that describes equipment should be provided several months in advance of energization so that operational planning studies (12 months in advance) can be performed. Estimated data is probably adequate for the equipment energization provided as-built data is provided within a reasonable amount of time. We suggest one month after energization as a reasonable time frame for providing as-built data. "Estimated" versus "as-built" data should be defined.
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
Gerald Rheault Manitoba #1,3,5,6	Yes See comment in #18. { Manitoba Hydro questions the 7 day period specified. Some processes would require significantly more lead time than that while some require less; how was the 7 day time chosen. The issue is one of supplying data on a timely basis. Isn't that covered by another requirement.}
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p><b>Yes – Comments indicating additional clarification needed</b></p>	
Mike Miller Southern Co #1	Yes Define energization
<p>The term energization was dropped from the revised standard.</p>	
<p><b>Yes – Comments to modify requirements</b></p>	
Toni Timberman BPA #1	Yes requirement should be on Generator Owner or Operator, and the timeline specified by the requesting entity. Delete "the energization of new facilities or changes to existing facilities". BA should receive data from Generator also...timeline as specified by requesting party, but no less than 7 days...

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<p>The suggested revisions were made and are reflected in the revised standard, except that the revised standard forces the RA to stipulate an acceptable time frame for providing the data – the reference to ‘7 days . . .’ was dropped based on industry comments.</p>	
<p>Richard Schwarz PNSC #2</p>	<p>Yes The time to provide data should be specified by the RA since everyone has different time requirement to make EMS &amp; model changes. Should pertain to all facilities, not just new facilities.</p>
<p>The suggested revisions were made and are reflected in the revised standard.</p>	
<p>Albert M. DiCaprio MAAC #2 Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 Ed Riley CA ISO #2 Joe Minkstein PG&amp;E #5 Karl Kohlrus CWL&amp;P #5 Richard Kafka Pepco #1 Stuart Goza TVA #1 Tom Petrich (5) PG&amp;E #1 William Smith Allegheny Pwr #1</p>	<p>Yes</p>

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**27. Requirement 9 – Do you agree with these levels of non-compliance for this requirement?**

<b>Original Levels of Non-compliance</b>	
1.	Not Applicable
2.	Not Applicable
3.	Not Applicable
4.	Data for new/revised facilities was not provided as requested

<b>Revised Levels of Non-compliance</b>	
1.	Not Applicable
2.	Not Applicable
3.	Not Applicable
4.	Data not provided to the reliability authority as specified

**Summary Consideration:**

The fourth level of non-compliance was modified to conform with the language in the revised requirement. The reference to 'new/revised facilities' was dropped – the revised requirement addresses the data the RA needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.

Several commenters suggested adding more levels of non-compliance – to give partial credit for having the data a little incorrect, or a little late, in an almost acceptable format, etc. The result of all of these is the same – the RA doesn't have the data it needs to accurately assess the system. There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any of its interconnection reliability operating limits. For these reasons, additional levels of non-compliance were not added. The industry will be asked to comment on this decision in the next posting of this standard.

<b>No – Comments indicating that addressing non-compliance is premature</b>	
Todd Lucas (6?) Southern Co #1	No Until numbers 18, 20, 22, 24, & 26 are resolved the levels of non-compliance cannot be determined
The requirements have been adjusted and the non-compliance has been modified to conform to those adjustments.	
Gregory Campoli NY ISO #2	No It is premature to develop compliance levels at this time.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Ed Riley CA ISO #2	No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.

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<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p><b>No – Comments indicating alternatives to suggested levels of non-compliance</b></p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No Perhaps there should be several levels that are time dependent. See earlier comments regarding self certification and re-certification.</p>
<p>Several commenters suggested adding more levels of non-compliance – to give partial credit for having the data a little incorrect, or a little late, in an almost acceptable format, etc. The result of all of these is the same – the RA doesn't have the data it needs to accurately assess the system. There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any of its interconnection reliability operating limits. For these reasons, additional levels of non-compliance were not added.</p> <p>Re-certification as used here, is not the certification process that an entity goes through to receive a 'certificate' to operate as a reliability function. Self-certification is a term used in the compliance program that refers to a process whereby an entity completes a form that states the entity is in compliance – and re-certification is the periodic re-submittal of that form to restate that the entity is still in compliance with the associated requirement.</p>	
<p>Peter Burke ATC #1</p>	<p>No Levels of non-compliance would be better if defined something like:</p> <ul style="list-style-type: none"> <li>(6 Data for new/revised facilities was provided less than seven days prior to energization.</li> <li>(6 Data for new/revised facilities was provided before one month after but not before energization.</li> <li>(6 Data for new/revised facilities was provided before three months but not before one month after energization.</li> <li>(6 Data for new/revised facilities was not provided within three months after energization.</li> </ul> <p>There's no desire for penalties that dis-incent people from energizing new equipment but there's need for penalties that encourage early reporting. Not sure that 7 days will be needed once systems are in palce and incremental updates are being performed. There may also be a need for determining the impact of the facility addition to the system before determining penalties. (Should a new 200 MW generator going into service be penalized the same as a distribution tap serving 5 MWs of load? Probably not but this standard as written does not differentiate between the two.)</p>
<p>Several commenters suggested adding more levels of non-compliance – to give partial credit for having the data a little incorrect, or a little late, in an almost acceptable format, etc. The result of all of these is the same – the RA doesn't have the data it needs to accurately assess the system. There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any of its interconnection reliability operating limits. For these reasons, additional levels of non-compliance were not added.</p> <p>The revised standard does not include references to new/revised facilities, nor does it include a strict '7 day' time frame for providing data.</p> <p>The revised standard clarifies that the RA must specify and collect the data it needs to support real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits.</p>	
<p><b>No – Comments indicating additional clarity is needed</b></p>	

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<p>Thomas Pruitt Duke #1</p>	<p>No See 26. <i>{Define “associated”. The language is not clear enough. For example, some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new facility. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}</i></p>
<p>The term ‘associated’ is not used in the revised standard. The revised requirement includes clarifying language to limit the number of RAs that may request data to those reliability authority(ies) with which it (the generator owner) has a reliability relationship.</p> <p>The revised standard does not include the 7- day lead time for providing data – instead the revised standard requires each RA to identify a time frame for providing it with data. The revised standard clarifies that the operational planning analysis addressed is done a day ahead of time. Operational Planning Analyses done a year ahead of time are not included in the scope of this standard.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p><b>No – Comments indicating non-compliance levels are inappropriate</b></p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No What if they provide the data, but it is 3 days prior to energization? Or they provide it 3 days after energization? Or 3 weeks after energization? What if they provide only partial data? Or only incorrect data? Are all these non-compliance events truly equal?</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA’s ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn’t have the data it needs to accurately assess the system with respect to its IROLs.</p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>See comments for requirement 5 <i>{ Seems like there should be more than one level of non-compliance. What if the data was incomplete for example? Shouldn't merit some non-compliance penalty?}</i></p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA’s ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn’t have the data it needs to accurately assess the system with respect to its IROLs.</p>	
<p>Karl Kohlrus CWL&amp;P #5</p>	<p>No There should be a reminder sent out if the data is not sent initially before going directly to Level 4.</p>
<p>Each entity must assume responsibility for meeting its own requirements. The suggestion that a reminder be sent out has not been adopted.</p>	

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<p>George Bartlett Entergy Svcs 1</p>	<p>No There probably should be more than one level of non-compliance and not supplying requested data should not be the highest level of violation. The first level should be "Data for new/revised facilities not provided to TOPs and associated RAs when the data was . The second level should be "Data for new/revised facilities was not provided as requested". The fourth level of non-compliance should be "Data not supplied to TOPs or associated RAs resulted in SOL violations".</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The result of all of the scenarios you described (missing data, partial data, or incorrect data) is the same – the RA doesn't have the data it needs to accurately assess the system with respect to its IROLs. It would be very difficult to determine that the lack of data, by itself, resulted in operating outside an IROL – for this reason the suggestion was not implemented.</p>	
<p>Joseph Buch Madison #4</p>	<p>No There is only 1 level of non-compliance, level 4 and no definition of the data required. If certain key items of "data" were defined as part of the standard and they were not provided, a level 4 non-compliance would be appropriate. If these items were provided, however they were only provided 2 days before energization a level 3 non-compliance might be appropriate. Similarly, if the data on the key items were provided 3 to 7 days before energization a level 2 non-compliance might be appropriate. See further comments in question 47.</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA's ability to monitor and assess the status of the interconnection with respect to operating within interconnection reliability operating limits.</p> <p>This standard will not define specifically what data must be provided. Data requirements vary from RA to RA and under the proposed standard, each RA must decide what data it needs and must specify that data.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No There should be levels of compliance based upon notification and collaboration with affected parties</p>
<p>These levels of non-compliance must be linked to this requirement. This requirement does not have a notification component. Levels of non-compliance for notification and collaboration would be more appropriate for the requirement that address specifying what data is needed.</p>	
<p><b>No – Comments indicating requirements are inappropriate</b></p>	
<p>Sam Jones ERCOT #2</p>	<p>See comments to #26 above. <i>{The timing of this Requirement conflicts with Requirement 5. That is, the seven days does not leave the RA any time to complete their obligations under Requirement 5.}</i></p>
<p>The standard was modified to eliminate the requirement that data be provided 'no less than 7 days prior to energization.' The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p>	
<p>Roger Green Southern Co #5</p>	<p>No These are non traditional requirements on generation owners (maybe not on the type of data but on the group or groups in which the generator must coordinate).</p>
<p>The Functional Model does assign the generator with the responsibility of providing facility data to its RA.</p>	
<p>Doug Hils</p>	<p>No Requirement are being duplicated between RA's and TOP's The standard should</p>

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Cinergy #1	require that the realibility analysis is being done by one or the other. It should not be necessary for both to duplicate the efforts
<p>Agree. The standard has been revised to eliminate this duplication. All of the redundant requirements for the TOP have been removed from the standard.</p>	
<p><b>No – Mix of comments</b></p>	
<p>Susan Morris SERC #2  Robert Reed TS (See List)</p>	<p>No</p> <p>1) See 26. In general there should be at least two levels of non-compliance identified.</p> <p><i>{Define “associated”. The language is not clear enough. For example, some might interpret the requirement to read differently than others (as follows) – A seven (7) day lead time is not sufficient for integration of data for a new faciliity. A more appropriate time-frame might be several months (given the time it takes to line up the telecommunications, etc., for transmission of a new quantity). If the data is going to be used for operational planning analysis, then this may require at least a one-year lead time.}</i></p> <p>(6 As an example of the need for clarification language, the “. . . no less than 7 days prior. “:</p> <p>In a market-based system, there are aspects of adding a new market entity that need considerably more than days-to-months lead time; for compliance a generator might be prohibited from operating commercially until all data and interconnection issues are resolved.</p>
<p>There is no requirement in the standards development process that mandates more than one level of non-compliance. The data being addressed here is critical to the RA’s ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits.</p> <p>The term, ‘associated’ was removed from the standard and was replaced with “the reliability authority with which it has a reliability relationship.”</p> <p>The standard was modified to eliminate the requirement that data be provided ‘no less than 7 days prior to energization.’ The revised requirement indicates that data must be provided within the timeframe specified by the RA.</p> <p>The type of data referenced in the comment about a market-based system is beyond the scope of this standard. The revised standard clarifies that the data is to support the RA’s real time monitoring, operational planning analyses and real time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits. Operational planning analyses are required to be conducted at least once each day looking at the day ahead.</p>	
<p>Fred Frederick Vectren #3 Tony Jankowski We-Energies #4</p>	<p>No</p>
<p>David Kiguel Hydro One #1</p>	<p>Yes/No</p> <p>We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance</p>

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<p>The data being collected under this requirement was meant to support the RA's ability to monitor and assess the status of the interconnection with respect to operating without exceeding any interconnection reliability operating limits. This has been clarified in the revised standard.</p> <p>This was not meant to address the data needed for long range planning studies. The revised standard clarifies that the RA must conduct an operational planning analysis at least once each day looking at the day ahead.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes delete new/revised facilities</p>
<p>The standard was revised as suggested.</p>	
<p>Richard Schwarz PNSC #2</p>	<p>Yes Should pertain to all facilities</p>
<p>The standard was revised to eliminate the specific reference to 'new or changed facilities'.</p>	
<p>Alan Johnson Mirant #6 Albert M. DiCaprio MAAC #2 Bob Burkard NCMPA1 # 3,4,5 Charles Yeung Reliant Energy #6 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2 Ed Stein Firstenergy Sol #6 Gerald Rheault Manitoba #1,3,5,6 Joanne Borrell FirstEnergy Sol #3 Joe Minkstein PG&amp;E #5 John Blazekovich Exelon #1,3,5,6 Kathleen Goodman ISO NE #2 Kim Warren IMO #2 Mike Miller Southern Co #1 Ray Morella FirstEnergy #1 Richard Kafka Pepco #1 Roman Carter So Co Gen 3,5,6 (6 members) Stuart Goza TVA #1 Tom Petrich (5) PG&amp;E #1 Vern Colbert Dominion #1 William Smith Allegheny Pwr #1</p>	<p>Yes</p>



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### 28. Requirement 10 – Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Original Requirement

The Reliability Authority (RA) shall perform reliability analyses to identify where on its system the RA may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

#### Measure(s)

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

#### Outcome(s)

The RA shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

#### Revised Requirement

The reliability authority shall perform operational planning analyses to verify that its planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.

The reliability authority shall perform real-time assessments to verify that it is not exceeding any interconnection reliability operating limits.

#### Measure(s)

**The reliability authority shall identify operating situations or events that impact its ability to operate its reliability area without exceeding any identified interconnection reliability operating limits.**

**The reliability authority shall conduct an operational planning analysis at least once each day, evaluating the next day's projected system operating conditions.**

- **The reliability authority shall conduct a real-time assessment periodically, but at least once every 30 minutes.**

#### Summary Consideration:

The requirement was revised to clarify that the reliability analyses are not intended to identify all possible problems, just credible problems within the RA's own area of responsibility that if left untended, could lead to instability, uncontrolled separation or cascading outages.

The definition of reliability analysis was refined to include both operational planning analyses and real time assessments, and this requirement was subdivided to reflect this refinement.

Several commenters indicated a need to stipulate a minimum frequency for conducting reliability analyses so a minimum frequency was added to the measures.

The outcomes section was redundant and was eliminated from all standards.

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No – Comments indicating additional clarity is needed	
(Compl Mgr)	<p>There should be some qualifiers that define a NERC minimum periodicity to complete reliability analysis. The RA should establish their particular cycle for doing reliability analysis, and that information should be included in their Certification documentation.</p> <p>Need to define what types of analysis are expected: actual flows versus limits, contingency analysis of all possible contingencies? Analysis of only those conditions defined in the day-ahead or seasonal studies? Is the requirement to do a “reliability analysis” every day? Every shift? Everytime a change in system configuration demands etc.</p>
<p>The requirement’s measures were refined to add a minimum frequency for conducting analyses. The suggestion that this be added to certification is outside the scope of the SDT – you are encouraged to submit comments on certification when the Certification SARs and standards are posted.</p> <p>The requirement was refined to add more clarity to the types of analyses that must be conducted.</p>	
Raj Rana AEP #1,3,5,6	<p>No</p> <p>This requirement is too vague. How often should the RA perform a reliability analysis? How often should the RA request the program to run? Once a hour? Once a day? Once a week? Should the reliability analysis program be running every 5 minutes or every 10 minutes. Per this requirement, if the RA so chooses, he could perform the analysis every other day and argue that is enough. Is it? The requirement should be clear that there is an expectation that the RA is performing an operational planning analysis on a daily basis looking at next day to next week projected conditions. Further, the RA must have the capability to perform a reliability analysis on demand in order to identify problems either real-time or on a next contingency basis. Finally, the RA should have a reliability analysis program (state estimator) that runs (which means it solves) a minimum of every 10 minutes.</p> <p>The Measure(s) section states the “program(s) run(s) when requested and identifies any problems that could cause instability”, . . . etc. “Any problems” is pretty broad. Often, a reliability analysis program (state estimator and operator load flow) does not perform an analysis on all possible contingencies but rather only credible contingencies identified by the operator from other system performance appraisals performed by a Planning Authority, a Transmission Owner’s Planning Section, RTO, or inter-regional study team. Do you really mean that the RA’s analysis program must be able to perform an analysis for all possible single contingency events within their network model? Many real-time analysis programs do not do this, but most RA’s also have access to off-line analysis programs that can meet this requirement. What is the intent here?</p> <p>We would suggest the requirement be that the reliability analysis program have the ability to identify first contingency problems (problems that could cause instability, uncontrolled separation, etc.) based upon credible first contingency scenarios identified by performance appraisals conducted by the PA or TOW’s Transmission Planning section.</p> <p>Also, define the time horizon.</p>
<p>The requirement’s measures were refined to add a minimum frequency for conducting analyses.</p> <p>The requirement was refined to add more clarity to the types of analyses that must be conducted.</p>	
David Kiguel Hydro One #1	<p>No</p> <p>It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>

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<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No There is insufficient detail in measuring compliance with this requirement. This requirement identifies both operational analysis and real time analysis which implies various time frames for assessment.</p>
<p>The standard was revised to indicate that it is addressing both operational planning analyses and real-time assessments.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No Clarification language is needed to identify the type of analysis required. Also, define the periodicity of the analysis – how often it needs to be performed. From a reliability standpoint, operational planning studies are recommended to be performed to determine the adequacy during system outages. (TS only – We agree with the requirement but there is insufficient detail to measure compliance)</p>
<p>The standard was revised to indicate that it is addressing both operational planning analyses and real-time assessments. The revised standard indicates the operational planning analysis must be conducted at least once each day to look at the day ahead – and requires that real-time assessments be performed at least once every 30 minutes.</p>	
<p>Thomas Pruitt Duke #1</p>	<p>No (6 Language needs clarification to identify the type of analysis required. Also, define the periodicity of the analysis – how often it needs to be performed. 2) The RA should ensure that this function is performed (but it would not necessarily do it itself). There should be some provision for the analysis to be performed by a third party.</p>
<p>The requirement was refined to add more clarity to the types of analyses that must be conducted and to add a minimum frequency for conducting analyses. The RA may have any of its tasks accomplished by a third party – but that doesn't shift the responsibility for compliance to that third party – the RA is still accountable for achieving the results.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No This needs clarification. Who is requesting that these programs be run? What type of programs? If there is no request, and nothing is done to study a potential reliability problem, is there non-compliance?</p>
<p>The RA is responsible for conducting these analyses to see if any of its IROLs will be exceeded without any request – these are conducted routinely by the RA. In the original requirement, the use of the phrase, 'when requested' was used to mean that the program ran for the RA's system operators. Many commenters indicated that this phrase wasn't clear, and it is not used in the revised standard. Several commenters did indicate a desire to state a minimum number of times that the RA must conduct these analyses, and the standard was revised to indicated that the operational planning analysis must be conducted at least once each day and that real-time assessments must be performed at least once every 30 minutes. This standard will not require the use of any particular application program – this is left to each RA. The standard does state, however, that the RA runs the analyses to verify that it can operate without exceeding any interconnection reliability operating limits.</p>	
<p><b>No – Comments indicating requirements inappropriate</b></p>	
<p>Ed Riley CA ISO #2</p>	<p>No The types of reports that would be needed to identify “problems that could cause instability, uncontrolled separation or cascading outages . . .” are not done quickly,</p>

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	making it difficult to perform them in real-time. The wording of the Requirement sounds like these would be required in real-time, and it is not possible for a RA to complete them in this time-frame.
The requirement was revised to clarify what was meant by 'reliability analyses'. The term 'reliability analysis' was replaced with operational planning analyses and real time assessments – with different measures for each of these types of assessments.	
Alan Johnson Mirant #6	No Believe the requirement should specify which entities can make a request of the RA. Would also think that there should be a distinction made between requests of a real-time and planning nature.
The RA is responsible for conducting these analyses to see if any of its IROLs will be exceeded without any request – these are conducted routinely by the RA. In the original requirement, the use of the phrase, 'when requested' was used to mean that the program ran for the RA's system operators. Many commenters indicated that this phrase wasn't clear, and it is not used in the revised standard. The requirement was revised to clarify what was meant by 'reliability analyses'. The term 'reliability analysis' was replaced with operational planning analyses and real time assessments – with different measures for each of these types of assessments.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5	Yes/No We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance
The requirement was revised to clarify what was meant by 'reliability analyses'. The term 'reliability analysis' was replaced with operational planning analyses and real time assessments – with different measures for each of these types of assessments. As you suggested, the operational planning analysis does look ahead – and the real time assessment looks at the current conditions.	
Richard Schwarz PNSC #2	The RA should perform reliability analyses on the current operating system only to determine if the system is operating in a secure mode. This means running N-1, N-2 or credible contingency studies. The requirement should also include running an analysis program to mesh with the Measures and Outcome(s) requirement to run a reliability analysis program
The requirement was revised to clarify what was meant by 'reliability analyses'. The term 'reliability analysis' was replaced with operational planning analyses and real time assessments – with different measures for each of these types of assessments. As you suggested, the operational planning analysis does look ahead – and the real time assessment looks at the current conditions.	
Ed Stein Ray Morella Joanne Borrell Firstenergy #1, 3, 6 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2	No Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator.
The requirement that the TOP perform reliability analyses has been dropped from this standard. Under the Functional Model, the RA is responsible for the reliability of the interconnected system – the TOP is responsible for the local network.	
Joseph Buch Madison #4	No There are two portions of the bulk transmission system that must be analyzed for

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	<p>reliable operation. One is the portion that involves inter-regional or major regional areas and the other involves sub-regional or more localized areas. Having one entity trying to address both could result in items being overlooked. The RA should be responsible for the overall regional and interregional system. The TOP should be responsible for the sub-regional and local system which generally consists of the system operating at less than 200 kV.</p>
<p>The requirement that the TOP perform reliability analyses has been dropped from this standard. Under the Functional Model, the RA is responsible for the reliability of the interconnected system – the TOP is responsible for the local network.</p> <p>This standard focuses on ensuring that the reliability area under the RA’s control is operated without exceeding IROLs.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No</p> <p>The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation or cascading outages. See comments to question no. 10 above.</p> <p><i>{I am very confused by this Standard. Who is going perform these functions the TOP or the RA. The Standard appears to have both performing the same function. The Standard needs to define the relationship between the RA and TOP. Maybe that could be accomplished in a opening paragraph. The requirements on the limits may be too broad. For example, an operating limit should also protect the safety of the public. If a facility was loaded to the point where it no longer met clearance requirements, the RA should respect these limits. The standards also seem to ignore voltage limits. There are limits to how high or low the voltage should be allowed to go before action is required. In addition to steady-state voltages, there should be a limit on transient voltages as well. It is not clear from this standard that these limits apply.}</i></p>
<p>The scope of this standard must remain within the scope of the approved SAR. The purpose of this standard is to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The standard was revised to clarify that it addresses just the subset of system operating limits that are called, ‘interconnection reliability operating limits’ or IROLs. These are the limits that, if exceeded, can result in instability, uncontrolled separation, or cascading outages.</p> <p>The standard was also revised to clarify that the RA is responsible for performing reliability analyses of its reliability area – not the TOP. The duplicate requirements for the TOP have been dropped from this standard.</p>	
<p>Fred Frederick Vectren #3</p>	<p>No</p>
<p><b>Mixed comments</b></p>	
<p>Toni Timberman BPA #1</p>	<p>Yes/No</p> <p>Lots of comments here....what is the definition of “problems”? Is the requirement saying that studies must be done until they come up with a scenario that would cause instability, etc? Taken literally, that is what this requirement is asking for. Must the studies run until they identify the 6-line, 3-substation outage combination that would tip the system over the edge? Realistically, the requirement should specify “n-1, n-2” types of studies, or “credible contingencies”, etc. Required analyses should be in line with the NERC Reliability Criteria. The requirement seems to be backwards. The RA should evaluate its current operating condition to assess that the system is secure from instability, etc. If the Operational Planning studies were done correctly, no “problem” should be identified that could cause instability, etc. Also, there is nothing in the requirement that indicates a “program should run”, but that is what the measure and the compliance levels are related to. This seems to have been made (inadvertently?) very specific to real-</p>

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	<p>time analysis programs, and I don't believe that is the intent. The outcome mentions "shall run programs" but nothing is said about this in the requirement. Having a dispatcher (operator) assess the condition of the power system is valid "reliability analyses" according to the explanation of terms at the front of this comment form, but I don't believe this could be considered running an analysis program.</p>
<p>The word, 'problems' is ambiguous and was dropped from the revised standard.</p> <p>A timing component was added to the measures to indicate a minimum frequency for performing the required analyses.</p> <p>The standard was revised to replace the phrase, 'reliability analyses' with two terms – operational planning analysis and real time assessments. In the revised standard, there is a performance measure for conducting an operational planning analysis and a separate performance measure for conducting real-time assessments.</p> <p>All references to programs running have been dropped from the revised standard.</p>	
<p><b>Yes – Other comments</b></p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes</p> <p>The FRCC Security Process specifies the periodicity for performing real time contingency analysis and for operations planning studies. We agree with this requirement but would not support NERC telling how often the analysis should be performed. That should be left up to the Regions or the RAs.</p>
<p>The revised standard does distinguish between operational planning analyses and real-time assessments and includes a minimum frequency for conducting each of these. If the minimum frequency is more stringent than FRCC's Security Process, then please submit a Regional Difference when the revised standard is posted for comment.</p>	
<p><b>Yes – suggestions for additional clarifications</b></p>	
<p>Sam Jones ERCOT #2  OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>Yes</p> <p>We agree with the Requirement; however, as written, it assumes that all RAs have online reliability analysis programs to identify the applicable limits. In fact, many use off-line studies to perform base case analyses, which are translated into cyclic computer calculations.</p>
<p>The revised standard distinguishes between operational planning analyses and real-time assessments and includes a minimum frequency for conducting each of these. The measures and levels of non-compliance don't reference the use of any specific type of program and don't apply sanctions for the program not running as requested – instead the sanctions focus on not conducting the analyses. As you pointed out, different RAs use different programs to achieve the same objective.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes</p> <p>Manitoba Hydro agrees with the use of online reliability analysis programs to identify possible instability, uncontrolled separation or cascading outages that could adversely impact the reliability of the bulk transmission system. The analysis performed will identify the possibility of problems occurring but will not determine the secure operating limit for the system. Steps should then be taken by the RA to put the system in an operating mode to ensure that Operating Security Limits will not be violated.</p>
<p>Agreed. This is what this standard attempts to accomplish.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>Yes</p> <p>We agree with this requirement in general. However, we suggest removing the term "when requested" from the Measures and add "as needed" in its place. The RA should be able to run analysis programs "when requested". It is more</p>

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	important he run the programs when needed to analyze the system limitations.
<p>Several commenters disliked the phrase, 'when requested'. This was replaced with a minimum frequency for conducting the analyses. In the original requirement, the use of the phrase, 'when requested' was used to mean that the program ran for the RA's system operators when the system operators tried to run the program. Many entities have state estimators that aren't operational. The intent was to ensure that the system operators had a program that did operate and could identify situations where IROLs may be exceeded. Many commenters indicated that this phrase wasn't clear, and some commenters indicated that there may be several programs used to analyze the system – consequently the phrase, 'when requested' is not used in the revised standard.</p>	
Francis Halpin BPA Bus Line #5,6	<p>Yes</p> <p>In principle we agree, this 'analyses' needs to be done immediately prior to the operating day – Some description needs to be added to provide clarity on when the analyses are supposed to be completed</p>
<p>The revised standard indicates that the operational planning analysis needs to be done a minimum of once each day. With RAs operating in different time zones, there didn't seem to be a reason for specifying a time when these analyses need to be completed.</p>	
Tom Petrich (5) PG&E #1	<p>Yes</p> <p>Please modify the sentence to read:</p> <p>"The RA shall run reliability analysis program(s) and the program(s) shall identify potential problems, if any, that could cause generation and transmission facility overloads, instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system." We should not lose sight of the responsibility of the RA to take proper actions to correct the problems that it has identified.</p>
<p>The scope of the standard is limited to the scope that was identified in the associated SAR. Expanding the scope to include overloads is beyond the scope of that SAR, unless the overloads could cause instability, uncontrolled separation or cascading outages.</p> <p><b>1. The standard was revised to indicate that the purpose of the analyses addressed in this requirement is to verify that the RA can operate the next day without exceeding any IROLs and to verify that the RA is operating in real time without exceeding any IROLs.</b></p>	
Vern Colbert Dominion #1	<p>Yes</p> <p>Define how often the studies should be performed.</p>
<p>The revised standard breaks down reliability analyses into operational planning analyses and real-time assessments. The revised standard indicates that the operational planning analysis must be conducted at least once each day – and the real-time assessment must be conducted at least once every 30 minutes.</p>	
Roman Carter So Co Gen 3,5,6 (6 members)	<p>Yes</p> <p>Agree with the requirement, but there is insufficient information on the analysis and how often it would be performed.</p>
<p>The revised standard breaks down reliability analyses into operational planning analyses and real-time assessments. The revised standard indicates that the operational planning analysis must be conducted at least once each day – and the real-time assessment must be conducted at least once every 30 minutes.</p>	
Peter Burke ATC #1	<p>Yes</p> <p>Somehow the requirement should recognize that large scale system instability threats may not be easily or quickly identified.</p>

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<p>The revised standard breaks down reliability analyses into operational planning analyses and real-time assessments. The revised standard indicates that the operational planning analysis must be conducted at least once each day – and the real-time assessment must be conducted at least once every 30 minutes.</p> <p>The definition of ‘operational planning analysis’ is: An analysis of the expected system conditions, given the peak load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation.</p>	
<p>Lee Westbrook Oncor #1</p>	<p>Yes Do the analyses include the calculation of operating limits?</p>
<p>There is a separate standard that addresses the development of system operating limits. This standard starts with the assumption that system operating limits have been identified. This revised standard has a new requirement for the RA to identify the subset of its system operating limits that will serve as interconnection reliability operating limits, or IROLs.</p> <p>The analyses addressed in this revised requirement are operational planning analyses and real-time assessments.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes is it practical to require on-line dynamic, voltage, and small signal stability analysis, or can an RA use a proxy?</p>
<p>There were several comments questioning the inference that specific programs must be used to achieve the performance objective of this standard. The revised standard leaves the RA more flexibility in using whatever programs it has that can produce operational planning analyses and real-time assessments. The revised standard focuses on conducting the analyses – and doesn’t focus on whether or not some program ran when the system operators tried to use it.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>Yes Although we agree with the need for the requirement we find the wording of this requirement to be somewhat ambiguous. The wording suggests that the RA or TOP is required to run studies until a cascading outage is found. We believe that the intent should be to analyze “Planned for Contingencies” and identify problems if any are found, but the wording does not state this. The RA should develop and document their “Planned for Contingencies” and should only be required to run reliability analysis to analyze these “Planned for Contingencies”.</p>
<p>The standard was revised to replace the phrase, ‘reliability analyses’ with two terms – operational planning analysis and real time assessments. In the revised standard, there is a performance measure for conducting an operational planning analysis and a separate performance measure for conducting real-time assessments.</p> <p>The standard was revised to indicate that the purpose of the analyses addressed in this requirement is to verify that the RA can operate the next day without exceeding any IROLs and to verify that the RA is operating in real time without exceeding any IROLs.</p>	



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<p>Albert M. DiCaprio MAAC #2          Bob Burkard NCMAPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          Doug Hils Cinergy #1          James Stanton Calpine #5          Joe Minkstein PG&amp;E #5          Karl Kohlrus CWL&amp;P #5          Kim Warren IMO #2          Lee Xanthakos SCE&amp;G #1          Mike Miller Southern Co #1          Richard Kafka Pepco #1          Roger Green Southern Co #5          Stuart Goza TVA #1          Todd Lucas (6?) Southern Co #1          Tony Jankowski We-Energies #4          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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**29. Requirement 10 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Reliability analysis did not run when requested, but ran within 8 hours</li> <li>2. Reliability analysis did not run when requested, but ran in 8 - 24 hours</li> <li><b>3. Reliability analysis did not run when requested, and did not run within 24 hours</b></li> <li><b>4. Not Applicable</b></li> </ol>
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<p><b>Revised Levels of Non-compliance</b></p> <p><i>Operational Planning Analysis</i></p> <ol style="list-style-type: none"> <li>1. Not applicable</li> <li>2. Not applicable</li> <li>3. Not applicable</li> <li>4. Operational planning analysis not conducted at least once each day</li> </ol> <p><i>Real Time Assessment</i></p> <ol style="list-style-type: none"> <li><b>1. Not applicable</b></li> <li><b>2. Not applicable</b></li> <li><b>3. Not applicable</b></li> <li><b>4. Real-time assessment not conducted at least once every 30 minutes</b></li> </ol>
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**Summary Consideration:**

The associated requirement was modified to replace the single term ‘reliability analysis’ with the two terms, ‘operational planning analysis’ and ‘real-time assessments’. The measures in the revised requirement were shifted from focusing on whether or not an application program ran, to focusing on whether or not the assessments were conducted. The levels of non-compliance were modified to conform with these changes.

Several entities suggested linking the levels of non-compliance with recognition that a real-time assessment needed to take place – this was not adopted because it would be too difficult to assess.

<b>No – Comments indicating non-compliance levels don't match requirement</b>	
Richard Schwarz PNSC #2	No Compliance levels should measure the recognition that there was a need to perform analysis, and whether the analysis was or wasn't done.
The levels of non-compliance were revised to focus on whether or not the analyses were done. The suggestion that the levels of non-compliance be linked to the recognition that there was a need to perform an analysis was not adopted because of the difficulty in assessing this.	
FRCC 6-#1, 4-#2, 1-#2	No We are not sure that these levels fit completely. Wouldn't it depend on the type of reliability analyses being performed. For instance, if a real time contingency analysis was to be run by the RA every 5 minutes, these levels might not apply. But, if it was for a 7 day study twice a week, these might be more appropriate.

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	Also, who is requesting the reliability analysis? In FRCC, our Security Process (Reliability Plan) document lists the requirements for the reliability analysis in our region.
The revised standard does distinguish between an operational planning analysis conducted a day ahead and real time assessments. The levels of non-compliance were adjusted to independently assess whether or not each of these types of assessments was conducted.	
Alan Johnson Mirant #6	No Should be a distinction between non-compliance for real-time and planning requests.
The revised standard does distinguish between an operational planning analysis conducted a day ahead and real time assessments. The levels of non-compliance were adjusted to independently assess whether or not each of these types of assessments was conducted.	
Alan Boesch NPPD #1	No Is there a difference between “run” and converge? A program can run but not produce useful results. It also seems there should be some period of time to permit the solution to converge prior to being out of compliance. It is not realistic to get convergence 100% of the time on real-time programs.
The standard was revised to shift the focus from whether the application program ran to whether or not the two types of analyses were conducted – the operational planning analysis to look at the day ahead, and the real time assessments to look at the current situation.	
Toni Timberman BPA #1	No Compliance levels are not related to the requirement. A better measure would be whether the RA recognized (or didn’t) that there was a need to perform analysis, and whether the analysis was done (or wasn’t). The measures and compliance should assess whether the RA did analysis rather than program performance.
The standard was revised to shift the focus from whether the application program ran to whether or not the two types of analyses were conducted – the operational planning analysis to look at the day ahead, and the real time assessments to look at the current situation.  The suggestion that the levels of non-compliance be linked to the recognition that there was a need to perform an analysis was not adopted because of the difficulty in assessing this.	
Tom Petrich (5) PG&E #1	These levels of non-compliance are not clear to us. Who is “requesting” the reliability analysis and what is the basis? How does this relate to the actual operation of the system? In WECC, we require the system be adjusted within 20 minutes to reduce flows on stability limited paths to be within their operational limits for the system conditions. We would expect the reliability analysis be requested and performed well in advance so the RA is prepared to monitor and take corrective actions.
In the original requirement, the use of the phrase, ‘when requested’ was used to mean that the program ran for the RA’s system operators when the system operators tried to run the program. Several commenters indicated that this was unclear, and the revised standard does not use this term.  The revised standard replaces ‘reliability analysis’ with ‘operational planning analysis and real-time assessments’. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes.	
Susan Morris SERC #2 Thomas Pruitt Duke #1 Robert Reed	No (6 Number 28 needs to be addressed before non-compliance can be determined.  2) Based on the time-frames specified, the levels of non-compliance imply different compliance than the requirement does. Clarification should consider: Is the requirement based on real-time operating concerns, or is it based on a short-

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TS (See List)	term reliability/scheduling concern?
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes.</p>	
<p>Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No</p> <p>Please see comments to #28 above. Also, the Requirement is seemingly more important than it is depicted here. Instead of skipping Level 4, should use Levels 2, 3, and 4 with the caveat of having appropriate predetermined analyses to take the place of real-time analyses.</p> <p><i>(We agree with the Requirement; however, as written, it assumes that all RAs have online reliability analysis programs to identify the applicable limits. In fact, many use off-line studies to perform base case analyses, which are translated into cyclic computer calculations.)</i></p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>Non-compliance measures are too vague. What if the reliability analysis did not run when requested but ran within 5 or 10 minutes? What if the reliability analysis ran but the solution did not converge due to missing data, etc? There should be a different requirement and measure for real-time reliability analysis and operational planning analysis. Also, by the definition you provided, reliability analysis also includes system operator assessments. So by strict interpretation, as long as the RA's system operator assesses the situation, he would never be in violation of this requirement. As we said, this requirement and it's measures are too vague.</p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>The MISO Day 2 market relies on analysis tools running every 5 minutes. Not sure that 8 hours is an acceptable cutoff for level 1 non-compliance.</p> <p>It is unreasonable that an analysis not running once but recovering to run in a few minutes would still be considered non-compliance. Level 1 non-compliance should allow a buffer of time for the start of the analysis, maybe 1 or 2 hours, to be compliant. The reason is that some analyses (e.g., dynamic stability) can take 1 or 2 hours to set up the appropriate cases for the analysis and have the runs completed. Level 1 non-compliance would be more reasonable if written as follows:</p> <p>"Reliability analysis did not run within 1 (or 2) hour(s) of request, but ran within 8 hours."</p> <p>There is some concern as to how MISO can maintain an accurate model of the system based on the size of the system MISO's required to model and the number of changes being made to this system. Another concern is how reliable the network analysis tools can be when relying on ICCP as their only data source. Some of this data may be second hand which will tend to complicate analysis.</p>

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<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p> <p>The certification requirements for the RA will require that there be tools in place to develop real time and contingency analyses.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>No</p> <p>Level #3 should read "Reliability analysis did not run when requested, but ran in 24-48 hours" and level #4 should be added to read "Reliability analysis did not run when requested, and did not run in 48 hours"</p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Kim Warren IMO #2</p>	<p>No</p> <p>A minimum time standard should be built into this compliance issue similar to "Exceeding an Operating Limit but Not a Reportable Violation" (question 5 &amp; 6). There should be a time allowance for short term failures (i.e. &lt; 30 minutes) of the run of reliability analysis programs, under normal system conditions, before reporting is required.</p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>From the information the writer has provided we would suggest that the level of non compliance be based on findings that the system was found to be in an operating state that could have resulted in "instability, uncontrolled separation etc" due to the fact that an effective reliability analysis was not done, that would have identified the condition.</p>
<p>While this concept is supported, it was not adopted because it would be very difficult to assess this performance. The levels of non-compliance were adjusted so they focus on whether or not the analyses were conducted – not on the operation of the program used to conduct the analysis or the operations personnel that conducted the analysis.</p>	
<p>Joseph Buch Madison #4</p>	<p>No</p> <p>Of major concern is the case where a critical element has been forced out of service. Having the reliability analysis not run within 24 hours is not acceptable under these conditions. The real time system should not have to run "blind" for more than 24 hours. This should be classified as level 4 non-compliance. Also levels 1 &amp; 2 should be classified as levels 2 &amp; 3.</p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Ed Stein Joanne Borrell FirstEnergy #1, 3, 6</p>	<p>No</p> <p>The Reliability Coordinator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not</p>

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<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.</p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No This does not capture the wide range of possible risks associated with not meeting the intent of this requirement.</p>
<p>The standard was revised to shift the focus from whether or not the program was running to focusing on whether or not the analyses were conducted.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>No Manitoba Hydro believes that the times referenced are artificial and don't relate to system need and risk. Time frames should be determined based on system need and the relative risk posed to the system of not having these tools operational.</p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No Levels of non-compliance should be based on the RAs not analyzing the system as needed to determine system limitations. The levels of non-compliance, as specified, will direct the RAs efforts to running an analysis "when requested", rather than analyzing the system. Therefore, we suggest changing the levels of non-compliance in a direction that will incent the RA to properly analyze the system.</p>
<p>The suggested change to shift the focus to whether or not the RA analyzed the system was made – the revised standard's levels of non-compliance focus on whether or not the analyses were conducted.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No Not stringent enough.</p>
<p>The levels of non-compliance were further subdivided to assess sanctions if either the operational planning analysis or the real-time assessments were not conducted.</p>	
<p>Ed Riley CA ISO #2</p>	<p>No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>

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<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No Requirement are being duplicated between RA's and TOP's The standard should require that the realibility analysis is being done by one or the other. It should not be necessary for both to duplicate the efforts. The RA in our case has a much better view of the setup and transactions taking place across the grid. TOP view of the world would be very limited in comparison.</p>
<p>The duplicate requirements for the TOP have been eliminated from the revised standard.</p>	
<p>Fred Frederick Vectren #3</p>	<p>No</p>
<p>David Kiguel Hydro One #1</p>	<p>Yes/No We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance. Please see our comments under item # 44 (Regional and Interconnection Differences).</p>
<p>Many commenters voiced the same concern about the interpretation of the word 'analysis'. The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>Yes We agree with the form of non-compliance but without complete knowledge of how often the studies will be performed, we're not sure that the timeframes are adequate or not.</p>
<p>The revised standard replaces 'reliability analysis' with 'operational planning analysis and real-time assessments'. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	

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<p>Albert M. DiCaprio MAAC #2          Bob Burkard NCMPA1 # 3,4,5          Charles Yeung Reliant Energy #6          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          James Stanton Calpine #5          Joe Minkstein PG&amp;E #5          John Blazekovich Exelon #1,3,5,6          Karl Kohlrus CWL&amp;P #5          Lee Xanthakos SCE&amp;G #1          Mike Miller Southern Co #1          Richard Kafka Pepco #1          Stuart Goza TVA #1          Todd Lucas (6?) Southern Co #1          Tony Jankowski We-Energies #4          Vern Colbert Dominion #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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### 30. Requirement 11 – Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Original Requirement

The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

#### Measure(s)

Analysis program(s) run(s) when requested and identifies any problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system

#### Outcome(s)

The TOP shall run reliability analysis program(s) and the program(s) shall identify problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

**Revised Requirement:** None

#### Summary Consideration:

Several commenters indicated that this requirement should be removed or adjusted. Under the Functional Model, the RA has the principal responsibility for analyzing reliability-related data within its Reliability Area. Several commenters indicated a need for a requirement for TOPs to analyze the subset of the transmission system under their control to see instances where IROLs may be approached or exceeded. The system operating limits monitored by the TOP are not IROLs and are outside the scope of this standard. Because so many commenters indicated a desire for a requirement for the TOP, the SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP's requirement to analyze its portion of the transmission system.

Based on the comments submitted, a new requirement was added to the standard. The new requirement mandates that the TOP, BA and IA follow the RA's directives relative to IROLs. This should ensure that if the RA directs another entity to take action, and the other entity fails to take those actions, the entity that failed to act may be sanctioned.

No – Comments indicating requirements inappropriate for the TOP – belongs to the RA	
Doug Hils Cinergy #1	No Duplicated effort of the RA in standard 210
This requirement has been dropped from this standard.	
FRCC 6-#1, 4-#2, 1-#2	No It would seem that this requirement is really unnecessary. Requirement 10 has the RAs performing the analysis and that should be all that is needed. However, if it were to stay, TOPs should not be required to run on-line/real-time automated studies to identify and/or forecast bulk reliability concerns. NERC should not expect every TOP to acquire and maintain on-line reliability analysis tools without adequate reliability benefit to justify such a costly universal requirement – particularly since the RAs will be required to use such tools anyway.
This requirement has been dropped from this standard.	
Sam Jones ERCOT #2	No In the ERCOT Region, the primary responsibility for such analysis is ERCOT as

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<p>OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>the RA. This is in conjunction with any analysis the TOP performs, but the TOP does not have the primary responsibility. In other words, the RA is responsible for these analysis.</p> <p>Also, please refer to our comments to Q28.</p> <p><i>{We agree with the Requirement; however, as written, it assumes that all RAs have online reliability analysis programs to identify the applicable limits. In fact, many use off-line studies to perform base case analyses, which are translated into cyclic computer calculations.}</i></p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Vern Colbert Dominion #1</p>	<p>No The RA should perform this analysis</p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Richard Kafka Pepco #1</p>	<p>No This is an RA responsibility</p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Toni Timberman BPA #1</p>	<p>No</p> <p>Again, according to the Functional Model the TOP has no responsibilities related to the bulk transmission system. Also see comments to Requirement 10.</p> <p><i>{ Lots of comments here...what is the definition of “problems”? Is the requirement saying that studies must be done until they come up with a scenario that would cause instability, etc? Taken literally, that is what this requirement is asking for. Must the studies run until they identify the 6-line, 3-substation outage combination that would tip the system over the edge? Realistically, the requirement should specify “n-1, n-2” types of studies, or “credible contingencies”, etc. Required analyses should be in line with the NERC Reliability Criteria. The requirement seems to be backwards. The RA should evaluate its current operating condition to assess that the system is secure from instability, etc. If the Operational Planning studies were done correctly, no “problem” should be identified that could cause instability, etc. Also, there is nothing in the requirement that indicates a “program should run”, but that is what the measure and the compliance levels are related to. This seems to have been made (inadvertently?) very specific to real-time analysis programs, and I don’t believe that is the intent. The outcome mentions “shall run programs” but nothing is said about this in the requirement. Having a dispatcher (operator) assess the condition of the power system is valid “reliability analyses” according to the explanation of terms at the front of this comment form, but I don’t believe this could be considered running an analysis program.}</i></p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No</p> <p>This requirement should be eliminated – Requirement 10 (at the RA level) is adequate. See response to Question number 2.</p> <p><i>{1) RAs should be required to run (on-line/real-time) automated studies and off-line operational planning studies to identify and/or forecast bulk reliability concerns, but TOPs should not be subject to such requirements. The standard does not read as though manual analysis is sufficient, as it references “analysis tool” availability and then makes mention of “reliability analysis did not run” in multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability</i></p>

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	<p><i>analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement – particularly since the RAs will be required to use such tools anyway.</i></p> <p>(6) <i>What is the scope of the term “real time”? The footnote appearing on pg.1 of Version A defines “real time” but it is still not clear if this is restricted to data extracted from the Energy Management Systems, and does a reference to “real-time” conceptually imply data, or processes, or both?</i></p> <p>(6) <i>What is the definition and scope of “operational planning analysis”?</i></p> <p>4) <i>It seems the Reliability Analysis definition above is an attempt to conceal the fact that many existing entities performing Reliability Authority Functions do not have a working state estimator. The RA should explain what type of of analysis tool(s), the frequency, the type of input data (off-line or real-time), etc. that is used to perform “reliability analysis”.</i></p> <p>(6) <i>Why are the analysis requirements of the RA and the TOP identical? If this is true, why do we need an RA and a TOP?</i></p> <p>6) <i>Why isn’t there a standard for the TOP to provide telemetered data? There should be some type of performance standard established to assess the accuracy of telemetered data.}</i></p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>Requirements 210 and 211 are very similar. Requirement 210 applies to Reliability Coordinators. Requirement 211 applies to Transmission Operators. The requirements are duplicative. The standard should require a reliability analysis to be performed by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both of them doing a reliability analysis if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator</p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>The Transmission Operator may not have the wide area data that is available to a Reliability Coordinator and may not have as extensive a model as the Reliability Coordinator. There may be differences between the reliability analysis done by the Transmission Operator and the Reliability Coordinator. There needs to be coordination between the Transmission Operator and Reliability Coordinator on these analysis.</p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>This is duplicative to Requirement #10. Why should the RA and TOP be required to perform the same analysis? We do not dispute that redundancy is good nor that many TOP’s will perform this function. However, a NERC Reliability standard should not require the TOP to do this as this is clearly within the scope and function identified for the RA. The TOP should be clearly required to implement and follow the directives that an RA may issue due to their performance of a reliability analysis for their footprint. Further, we do not believe this is a function that the RA should be allowed to delegate to another party.</p> <p>Define the time horizon.</p>

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<p>This requirement has been dropped from this standard. The certification criteria for the RA and the TOP will require that agreements be in place that define the reporting relationship between the RA and the TOP.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>RA should take the lead &amp; TOP should assist but not be held to RA standard.</p> <p>Same comments as in 12.</p> <p><i>{I am not aware of many TOPs that have the tools needed to study voltage stability and/or transient stability for their systems in real time. MISO has these tools and is working to implement them. If the standard is implemented as written it will require a significant investment and development effort at many sites to put the necessary reliability monitoring tools in place. When done, we have duplication of effort and significant costs incurred with a limited benefit to the system.</i></p> <p><i>I do believe that the TOP should be capable of monitoring its system and analyzing to make sure it can survive first contingency events and maintain operations within acceptable guidelines. This requires a functioning State Estimator, Security Screening/Contingency Analysis, and Online Power Flow.}</i></p> <p>A basic analysis tool set (SE, SA, and PF) should be running at the TOP shop. The more advanced tools like voltage stability, transient stability, etc. may be better suited to the RAs.</p>
<p>This requirement has been dropped from this standard.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No</p> <p>It is unclear what the relationship and responsibilities of the TOP are as compared to the RA. The Standard proposes the same language for both functions. What is the reporting relationship and operational hierarchy between the RA and the TOP? Is the TOP analysis more “local” in nature than the RA analysis? What if each one’s analysis does not agree? Which analysis will prevail to ensure grid reliability?</p>
<p>This requirement has been dropped from this standard. The certification criteria for the RA and the TOP will require that agreements be in place that define the reporting relationship between the RA and the TOP.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No</p> <p>The drafting team should consider the requirement for TOP’s to run reliability analysis “programs” in the context of the small, non-RTO, Transmission Operator who may not have access to these tools.</p> <p>Again, clarity as to when the analysis must be completed.</p>
<p>This requirement has been dropped from this standard.</p>	
<p>Joseph Buch Madison #4</p>	<p>No</p> <p>See comments on question 28.</p> <p><i>{ There are two portions of the bulk transmission system that must be analyzed for reliable operation. One is the portion that involves inter-regional or major regional areas and the other involves sub-regional or more localized areas. Having one entity trying to address both could result in items being overlooked. The RA should be responsible for the overall regional and interregional system. The TOP should be responsible for the sub-regional and local system which generally consists of the system operating at less than 200 kV.}</i></p>
<p>This requirement has been dropped from this standard.</p>	
<p>Albert M. DiCaprio MAAC #2</p>	<p>No</p> <p>As noted above the TOP is not responsible for system analysis (which is the only</p>

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	<p>way it could identify an OSL). Therefore in the Reliability Standards process that responsibility still lies with the RA. The RA can provide the data to the TOP as needed or as agreed to (e.g. they can agree that the TOP gets the data directly)</p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Lloyd Linke MAPP #2</p>	<p>No</p> <p>RAs should be required to run (on-line/real-time) automated studies to identify bulk reliability concerns, but TOPs should not be subject to such requirements. I don't believe the Standard reads as though manual analysis is sufficient, as it references "analysis tool" availability and the makes mention of "reliability analysis did not run" in a multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement – particularly since the RAs will be required to use such tools anyway.</p> <p>See comment under question #7 regarding the definition of operating limits.</p> <p><i>{ System operator limits as defined herein is appropriate for RAs, but should not be defined as provided herein for TOPs. For TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived herein, this standard does not result in any entity assuring that the bulk power system is operating within limits, it only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.}</i></p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p><b>No – Comments indicating additional clarification needed</b></p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>This needs clarification. Who is requesting that these programs be run? What type of programs? If there is no request, and nothing is done to study a potential reliability problem, is there non-compliance?</p>
<p><a href="#">This requirement has been dropped from this standard.</a></p> <p>The term 'when requested' was meant to indicate that when the system operators tried to use the program, the program worked for them – this was not meant to indicate that one entity called and asked the RA to conduct an analysis. The language for the same requirement for the RA was modified to eliminate this confusion with the phrase 'when requested'.</p>	
<p>Ed Riley CA ISO #2</p>	<p>No.</p> <p>See response to question #28</p> <p><i>{The types of reports that would be needed to identify "problems that could cause instability, uncontrolled separation or cascading outages.." are not done quickly, making it difficult to perform them in real-time. The wording of the Requirement sounds like these would be required in real-time, and it is not possible for a RA to complete them in this time-frame.}</i></p>
<p><a href="#">This requirement has been dropped from this standard.</a></p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>There is insufficient detail in measuring compliance with this requirement. This requirement identifies both operational analysis and real time analysis which</p>

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	implies various time frames for assessment.
This requirement has been dropped from this standard. The same requirement for the RA was modified to distinguish between the analysis done for operational planning and the analysis done for real-time assessments.	
<b>No – Comments suggesting specific modifications to the requirements</b>	
Alan Johnson Mirant #6	No The measure should specify which functions can make a request of the TOP. There may also be a need to make a distinction between real-time and planning requests.
This requirement has been dropped from this standard. The term ‘when requested’ was meant to indicate that when the system operators tried to use the program, the program worked for them – this was not meant to indicate that one entity called and asked the RA to conduct an analysis. The language for the same requirement for the RA was modified to eliminate this confusion with the phrase ‘when requested’.	
Thomas Pruitt Duke #1	No There should be some provision for the analysis to be performed by a third party.
Several commenters indicated that this requirement should be dropped from this standard and that change was made.	
Alan Boesch NPPD #1	No The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation ore cascading outages. See comments to question no. 10 above. <i>{The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation ore cascading outages. See comments to question no. 10 above.}</i>
Several commenters indicated that this requirement should be dropped from this standard and that change was made. This standard’s focus is limited to the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The revised standard calls these, ‘interconnection reliability operating limits’ or IROLs. Several other commenters shared your concern that a requirement is needed that addresses a broader range of system operating limits. The SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP’s requirement to monitor its system operating limits.	
George Bartlett Entergy Svcs 1	No Our comments to Requirement 10 apply here also. <i>{ We agree with this requirement in general. However, we suggest removing the term “when requested” from the Measures and add “as needed” in its place. The RA should be able to run analysis programs “when requested”. It is more important he run the programs when needed to analyze the system limitations.}</i>
Several commenters indicated that this requirement should be dropped from this standard and that change was made. The term ‘when requested’ was meant to indicate that when the system operators tried to use the program, the program worked for them – this was not meant to indicate that one entity called and asked the RA to conduct an analysis. The language for the same requirement for the RA was modified to eliminate this confusion with the phrase ‘when requested’.	
Compliance	Delete – Duplication of effort between RC and TOP

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Managers	
Fred Frederick Vectren #3	No
<b>Yes – Comments suggesting additional clarifications</b>	
Kim Warren IMO #2	<p>Yes/No</p> <p>Yes ,only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles(eg. Switching, maintenance, outage &amp; construction notification) that the Functional Model defines for the TOP.</p> <p>Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.</p>
<p>Several commenters indicated that this requirement should be dropped from this standard and that change was made. This standard is only focusing on the subset of system limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The work of the OLDTF was considered in the revisions to this standard. While the concepts in the OLDTF report are very similar to the objectives of this standard, there are some significant differences. The SDT is doing its work as part of an open standards development process and will utilize the work of the OLDTF to the extent that its work is available and is submitted in response to public postings of the draft standard. The SDT will not wait for the OLDTF or any other group to complete its work.</p>	
David Kiguel Hydro One #1	<p>Yes/No</p> <p>We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance. Please see our comments under item # 44 (Regional and Interconnection Differences).</p>
<p>Several commenters indicated that this requirement should be dropped from this standard and that change was made. Your comments were applied to the changes made to the same requirement for the RA. Additional clarity was added to the revised requirement to distinguish between an operational planning analysis and a real-time assessment. The revised RA requirement indicates that the operational planning analysis must be conducted at least once a day, and the real-time assessment must be done at least every 30 minutes.</p>	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5	<p>Yes/No</p> <p>We are unsure what type of analysis would be required here and it is unclear how often it would need to be performed. From a reliability standpoint, operational planning studies would be done that considers adequacy and system outages. We agree with the requirement but there is insufficient detail to measure compliance</p>
<p>Several commenters indicated that this requirement should be dropped from this standard and that change was made. Your comments were applied to the changes made to the same requirement for the RA. Additional clarity was added to the revised requirement to distinguish between an operational planning analysis and a real-time assessment. The revised RA requirement indicates that the operational planning analysis must be conducted at least once a day, and the real-time assessment must be done at least every 30 minutes.</p>	
Lee Xanthakos SCE&G #1	<p>Yes/No</p> <p>See comment for question 12.</p> <p><i>{ I agree with requirements, but I do not agree that it written exactly the same as the RAs. As a matter of fact, my opinion of the entire draft is that a distinction is</i></p>

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	<i>made between the requirements of an RA and a TOP. Why have two entities required doing the same thing?}</i>
Several commenters indicated that this requirement should be dropped from this standard and that change was made. All of the redundant requirements for the TOP were dropped from the standard because under the Functional Model, the TOP is not responsible for operating the portion of the transmission system that involves interconnection reliability operating limits or IROLs.	
Lee Westbrook Oncor #1	Yes See Requirement 10. { Do the analyses include the calculation of operating limits?}
Several commenters indicated that this requirement should be dropped from this standard and that change was made. The analyses being addressed do not include the calculation of operating limits – but there is a separate requirement that IROLs be identified. The calculation of system operating limits is addressed by a separate standard, “Determine Facility Ratings, System Operating Limits and Transfer Capabilities”.	
Gerald Rheault Manitoba #1,3,5,6	Yes See comment for #28. { Manitoba Hydro agrees with the use of online reliability analysis programs to identify possible instability, uncontrolled separation or cascading outages that could adversely impact the reliability of the bulk transmission system. The analysis performed will identify the possibility of problems occurring but will not determine the secure operating limit for the system. Steps should then be taken by the RA to put the system in an operating mode to ensure that Operating Security Limits will not be violated.}
Several commenters indicated that this requirement should be dropped from this standard and that change was made. As indicated in your comment, the type of analysis programs needed to analyze the transmission system to identify situations that could lead to instability, uncontrolled separation or cascading outages that could adversely impact the reliability of the bulk transmission system are used by the RA and not the TOP.	
John Blazekovich Exelon #1,3,5,6	Yes Although we agree with the need for the requirement we find the wording of this requirement to be somewhat ambiguous. The wording suggests that the RA or TOP is required to run studies until a cascading outage is found. We believe that the intent should be to analyze “Planned for Contingencies” and identify problems if any are found, but the wording does not state this. The RA or TOP should develop and document their “Planned for Contingencies” and should only be required to run reliability analysis to analyze these “Planned for Contingencies”.
Several commenters indicated that this requirement should be dropped from this standard and that change was made. The RA’s requirement was modified to indicate that an operational planning analysis must be conducted at least once each day and a real-time assessment must be conducted at least once every 30 minutes.	
Tom Petrich (5) PG&E #1	Yes Please modify the sentence to read: “The TOP shall run reliability analysis program(s) and the program(s) shall identify potential problems, if any, that could cause generation and transmission facility overloads, instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.” We should not lose sight of the responsibility of the TOP to take proper actions to correct the problems that it has identified.



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<p>Several commenters indicated that this requirement should be dropped from this standard and that change was made. Several commenters indicated that not all TOPs have the programs needed to conduct these analyses – and other commenters indicated that Functional Model assigns this responsibility to the RA and not the TOP.</p> <p>Your suggestion implies that the scope of the standard be expanded to include generation and facility overloads. This scope of this standard was set with the approval of its associated SAR. The scope of the approved SAR does not include overloads unless those overloads could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>Yes</p> <p>However we have the same comments as in question #28.</p> <p><i>{ Agree with the requirement, but there is insufficient information on the analysis and how often it would be performed.}</i></p>
<p>Several commenters indicated that this requirement should be dropped from this standard and that change was made. The same requirement for the RA was modified to add more clarity to the type of analyses that must be conducted, and the frequency with which they must be conducted.</p>	
<p>Bob Burkard NCMPA1 # 3,4,5 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 James Stanton Calpine #5 Joe Minkstein PG&amp;E #5 Karl Kohlrus CWL&amp;P #5 Mike Miller Southern Co #1 Roger Green Southern Co #5 Stuart Goza TVA #1 Todd Lucas (6?) Southern Co #1 Tony Jankowski We-Energies #4 William Smith Allegheny Pwr #1</p>	<p>Yes</p>

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**31. Requirement 11 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Reliability analysis does not run when requested, but runs within 8 hours</li> <li>2. Reliability analysis does not run when requested, but runs in 8 - 24 hours</li> <li>3. Reliability analysis does not run when requested, and does not run within 24 hrs</li> <li>4. Not Applicable</li> </ol>
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<p><b>Revised Levels of Non-compliance:</b> None</p>
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**Summary Consideration:**

Several commenters indicated that this requirement should be removed or adjusted. Under the Functional Model, the RA has the principal responsibility for analyzing reliability-related data within its Reliability Area. Several commenters indicated a need for a requirement for TOPs to analyze the subset of the transmission system under their control to see instances where IROLs may be approached or exceeded. The system operating limits monitored by the TOP are not IROLs and are outside the scope of this standard. Because so many commenters indicated a desire for a requirement for the TOP, the SDT has advised that the Director-Standards that there may be a need for an additional standard to address the TOP’s requirement to analyze its portion of the transmission system.

<p><b>No – Comments indicating additional clarification needed</b></p>	
<p>Alan Johnson Mirant #6</p>	<p>No Should be a distinction between non-compliance for real-time and planning requests.</p>
<p>Although this requirement was dropped from this standard – your comment was applied to the same requirement for the RA. There, the levels of non-compliance were adjusted so that compliance with conducting an operational planning analysis is assessed separately from compliance with conducting real-time assessments.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No Is there a difference between “run” and converge? A program can run but not produce useful results. It also seems there should be some period of time to permit the solution to converge prior to being out of compliance. It is not realistic to get convergence 100% of the time on real-time programs</p>
<p>This requirement and its associated levels of non-compliance have been dropped from the revised standard.</p>	
<p>Kim Warren IMO #2</p>	<p>No A minimum time standard should be built into this compliance issue similar to “Exceeding an Operating Limit but Not a Reportable Violation” (question 5 &amp; 6). There should be a time allowance for short term failures (i.e. &lt; 30 minutes) of the run of reliability analysis programs, under normal system conditions, before reporting is required.</p>

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<p>Although this requirement was dropped from this standard – your comment was applied to the same requirement for the RA.</p> <p>The revised RA requirement replaces ‘reliability analysis’ with ‘operational planning analysis and real-time assessments’. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>Non-compliance measures are too vague. What if the reliability analysis did not run when requested but ran within 5 or 10 minutes? What if the reliability analysis ran but the solution did not converge due to missing data, etc? There should be a different requirement and measure for real-time reliability analysis and operational planning analysis. Also, by the definition you provided, reliability analysis also includes system operator assessments. So by strict interpretation, as long as the RA’s system operator assesses the situation, he would never be in violation of this requirement. As we said, this requirement and it’s measures are too vague. Define the time horizon.</p> <p>Should the concern be limited to those thermal overloads and voltage conditions that lead only to catastrophic events?</p>
<p>Although this requirement was dropped from this standard – your comment was applied to the same requirement for the RA.</p> <p>The revised RA requirement replaces ‘reliability analysis’ with ‘operational planning analysis and real-time assessments’. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p> <p>The scope of the standard is limited to the scope defined in the SAR’s purpose - “to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system”</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No</p> <p>It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can’t be objectively measured.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>These levels of non-compliance are not clear to us. Who is “requesting” the reliability analysis and what is the basis? How does this relate to the actual operation of the system? In WECC, we require the system be adjusted within 20 minutes to reduce flows on stability limited paths to be within their operational limits for the system conditions. We would expect the reliability analysis be requested and performed well in advance so the RA is prepared to monitor and take corrective actions.</p>

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<p>Although this requirement and its associated levels of non-compliance have been dropped from the standard, your comment was applied to the revisions made to the same requirement for the RA. With the RA requirement, the language that suggested that a program run, 'when requested' was dropped. The term, 'when requested' was intended to mean that when the system operators tried to run the program, the program worked – this was not intended to mean that one entity might call the RA and ask that an analysis be conducted for them.</p> <p>With the RA requirement, additional details were added to specify that an operational planning analysis must be conducted at least once a day, and a real-time assessment must be conducted at least once every 30 minutes.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>We have the same comments as in question #29 <i>{ We agree with the form of non-compliance but without complete knowledge of how often the studies will be performed, we're not sure that the timeframes are adequate or not.}</i></p>
<p>Although this requirement and its associated levels of non-compliance have been dropped from the standard, your comment was applied to the revisions made to the same requirement for the RA. With the RA requirement, additional details were added to specify that an operational planning analysis must be conducted at least once a day, and a real-time assessment must be conducted at least once every 30 minutes.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>See comment for #29. <i>{ Manitoba Hydro believes that the times referenced are artificial and don't relate to system need and risk. Time frames should be determined based on system need and the relative risk posed to the system of not having these tools operational.}</i></p>
<p>Although this requirement and its associated levels of non-compliance have been dropped from the standard, your comment was applied to the revisions made to the same requirement for the RA. With the RA requirement, the levels of non-compliance were revised to focus on whether or not the analyses were conducted – not on whether or not a program ran.</p>	
<p><b>No – Comments indicating compliance levels inappropriate</b></p>	
<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1, 3, 6 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No The Transmission Operator should be allowed to use a previous reliability analysis that covered similar system conditions if the reliability analysis could not be run because of computer problems or was duplicative of a previous reliability analysis. Such action should not result in a non-compliance.</p>
<p>Although this requirement and its associated levels of non-compliance have been dropped from the standard, your comment was applied to the revisions made to the same requirement for the RA. With the RA requirement, the levels of non-compliance were revised to focus on whether or not the analyses were conducted – not on whether or not a program ran.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No Our comments to Requirement 10 apply here also. <i>{ Levels of non-compliance should be based on the RAs not analyzing the system as needed to determine system limitations. The levels of non-compliance, as specified, will direct the RAs efforts to running an analysis "when requested", rather than analyzing the system. Therefore, we suggest changing the levels of non-compliance in a direction that will incent the RA to properly analyze the system.}</i></p>

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<p>Although this requirement and its associated levels of non-compliance have been dropped from the standard, your comment was applied to the revisions made to the same requirement for the RA.</p> <p>The suggested change to shift the focus to whether or not the RA analyzed the system was made – the revised standard’s levels of non-compliance focus on whether or not the analyses were conducted.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>From the information the writer has provided we would suggest that the level of non compliance should be based on findings that the system was found to be in an operating state that could have resulted in “instability, uncontrolled separation etc” due to the fact that an effective reliability analysis was not done, that would have identified the condition.</p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard.</p> <p>While the concept is supported, it was not adopted for use with the same RA requirement because it would be very difficult to assess this performance. The levels of non-compliance were adjusted for the RA requirement so they focus on whether the analyses were conducted – not on the operation of the program used to conduct the analysis or the operations personnel that conducted the analysis.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>This does not capture the wide range of possible risks associated with not meeting the intent of this requirement.</p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard.</p> <p>The same requirement for the RA was modified to focus on whether the required analyses were conducted, rather than on whether the software program was operating. The revised RA requirement assesses compliance with conducting the operational planning analysis separately from conducting real-time assessments. The performance reset period was changed to ‘one day’ to give more emphasis to the seriousness of not running these analyses.</p>	
<p>Joseph Buch Madison #4</p>	<p>No</p> <p>See comments on question 29.</p> <p><i>{ Of major concern is the case where a critical element has been forced out of service. Having the reliability analysis not run within 24 hours is not acceptable under these conditions. The real time system should not have to run “blind” for more than 24 hours. This should be classified as level 4 non-compliance. Also levels 1 &amp; 2 should be classified as levels 2 &amp; 3.}</i></p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard.</p> <p>The same requirement for the RA was modified to focus on whether the required analyses were conducted, rather than on whether the software program was operating.</p>	
<p>Toni Timberman BPA #1</p>	<p>No</p> <p>See comments to Requirement 10</p> <p><i>{ Compliance levels are not related to the requirement. A better measure would be whether the RA recognized (or didn’t) that there was a need to perform analysis, and whether the analysis was done (or wasn’t). The measures and compliance should assess whether the RA did analysis rather than program performance.}</i></p>
<p>This requirement and its associated levels of non-compliance have been removed from the revised standard.</p> <p>The suggestion that non-compliance be linked to ‘recognizing’ is difficult to enforce and wasn’t adopted for use with the same RA requirement’s levels of non-compliance. Your suggestion that the levels of non-compliance focus on whether the analysis was conducted was adopted and is reflected in the revised standard.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>No</p> <p>Too lax.</p>

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<p>This requirement and its associated levels of non-compliance have been removed from the revised standard. The same requirement for the RA was modified and addresses your comment about levels of non-compliance being too lax. With the revised levels of non-compliance for the RA's requirement, separate level four sanctions are applied for failing to conduct either an operational planning analysis or a real-time assessment.</p>	
<p><b>No – Comments indicating requirement is inappropriate</b></p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No We really do not think this requirement is necessary.</p>
<p>This requirement and its associated levels of non-compliance have been removed from the revised standard.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No Requirement 12 and 13 duplicate activities between the RA and the TOP's. In general I agree with the requirement but only one entity should be required to fulfill requirement.</p>
<p>This requirement and its associated levels of non-compliance have been removed from the revised standard.</p>	
<p>Susan Morris SERC #2 Thomas Pruitt Duke #1 Robert Reed TS (See List)</p>	<p>No See 30. {This requirement should be eliminated – Requirement 10 (at the RA level) is adequate. See response to Question number 2.}</p>
<p>This requirement and its associated levels of non-compliance have been removed from the revised standard.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>No See #30  { RAs should be required to run (on-line/real-time) automated studies to identify bulk reliability concerns, but TOPs should not be subject to such requirements. I don't believe the Standard reads as though manual analysis is sufficient, as it references "analysis tool" availability and the makes mention of "reliability analysis did not run" in a multiple locations. This verbiage indicates that manual reliability analysis is not sufficient. Therefore, modifications should be made to alter this requirement for the TOPs. Expecting every TOP to acquire and maintain on-line reliability analysis tools is too expensive and too obtrusive without adequate reliability benefit to justify such a universal requirement – particularly since the RAs will be required to use such tools anyway.  See comment under question #7 regarding the definition of operating limits.  { System operator limits as defined herein is appropriate for RAs, but should not be defined as provided herein for TOPs. For TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived herein, this standard does not result in any entity assuring that the bulk power system is operating within limits, it only results in operating within those limits for which violations result in instability/cascading outage risk. That is inappropriate. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by this standard.}</p>

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<p>This requirement and its associated levels of non-compliance have been removed from the revised standard.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Same as response to Question #29, subject to advice provided to Question #30.</p> <p><i>{The MISO Day 2 market relies on analysis tools running every 5 minutes. Not sure that 8 hours is an acceptable cutoff for level 1 non-compliance. It is unreasonable that an analysis not running once but recovering to run in a few minutes would still be considered non-compliance. Level 1 non-compliance should allow a buffer of time for the start of the analysis, maybe 1 or 2 hours, to be compliant. The reason is that some analyses (e.g., dynamic stability) can take 1 or 2 hours to set up the appropriate cases for the analysis and have the runs completed. Level 1 non-compliance would be more reasonable if written as follows:</i></p> <p><i>“Reliability analysis did not run within 1 (or 2) hour(s) of request, but ran within 8 hours.”</i></p> <p><i>There is some concern as to how MISO can maintain an accurate model of the system based on the size of the system MISO’s required to model and the number of changes being made to this system. Another concern is how reliable the network analysis tools can be when relying on ICCP as their only data source. Some of this data may be second hand which will tend to complicate analysis.}</i></p> <p>Additionally, if system conditions are “normal,” it may be acceptable to lose applications for an extended period of time (possibly 1 hour) without this being a problem. Alternatively, at some times, the loss of study tools for 10 minutes can be a disaster. A flat 8 hour cutoff may force TOPs to have applications support personnel on site around the clock which may not be necessary. Non-compliance should be defined in a way that conforms to Operator sense of urgency for the analysis tools.</p>
<p>This requirement and its associated levels of non-compliance have been removed from the revised standard.</p> <p>The same requirement for the RA has been revised to replace ‘reliability analysis’ with ‘operational planning analysis and real-time assessments’. The revised measures require that the operational planning analysis be done at least once a day and that the real-time assessments be done at least once every 30 minutes. The levels of non-compliance were adjusted to conform with these changes and focus on whether or not the analyses were conducted without looking at the programs used to conduct the analyses.</p> <p>The certification requirements for the RA will require that there be tools in place to develop real time and contingency analyses.</p>	
<p><b>No – Other comments</b></p>	
<p>Ed Riley CA ISO #2</p>	<p>No</p> <p>The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can’t be objectively measured.</p>	
<p>Fred Frederick Vectren #3 Albert M. DiCaprio MAAC #2 Vern Colbert Dominion #1 Richard Kafka Pepco #1</p>	<p>No</p>

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### 32. Requirement 12 – Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Original Requirement

The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

The RA shall document actions taken.

#### Measure(s)

Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

#### Outcome(s)

**The RA shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.**

#### Revised Requirement

The reliability authority shall act or direct others to act to:

- Prevent instances where interconnection reliability operating limits may be exceeded
- Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded

The reliability authority shall document instances of exceeding interconnection reliability operating limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding interconnection reliability operating limits for time greater than or equal to  $T_v$ .

#### Measure(s)

1. **The reliability authority shall document each instance of exceeding an interconnection reliability operating limit:**
  - **The reliability authority shall document via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)**
2. **The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ :**
  - **The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five business days of the initiation of the event. (The report includes the date and time of the event, identification of which interconnection reliability operating limit was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the interconnection reliability operating limit, actions taken or directives issued, and explanation of results of actions or directives.)**



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### Summary Consideration:

This requirement was revised to more clearly indicate that the RA may act or may direct others to act. A footnote has been added to clarify that under some conditions, taking no overt action may be a reasonable 'action'. The requirement has been revised to clarify that we are trying to prevent or mitigate exceeding IROLs. The requirement has been subdivided into two clearly separate items that address prevention and mitigation. This requirement duplicated much of what was in a separate requirement for documentation – and the two have been combined here. The Outcomes section deleted from all standards.

No – Comments indicating requirement is inappropriate	
Lee Xanthakos SCE&G #1	<p>No</p> <p>We do not agree with this requirement. Furthermore we do not agree that NERC has the authority to force such a requirement onto the RAs. As written, the requirement essentially bestows functional control to the RA. This is something the South Carolina PSC has expressly ruled is the responsibility of the TSP and no one else. Actual and functional control of the transmission system is the responsibility of SCE&amp;G's transmission department. This responsibility can not and will not be transferred to any other entity without expressed approval of the Public Service Commission. This approval has not been given nor is it expected to be given, regardless of SCE&amp;G's desires</p> <p>We recommend that drafting team should instead write a standard that requires the RA to notify the TSP of a imminent situation and provide assistance, if requested, so the TSP can implement their own mitigation plans.</p>
<p>These new reliability standards are being drafted in support of the Functional Model. Under the Functional Model, the reliability authority has responsibility for protecting the reliability of the transmission system – and the transmission operator has responsibility for protecting the reliability of local networks. It sounds like SCE&amp;G may serve as both an RA and a TSP – this is totally acceptable under the Functional Model. If this is true, there is no conflict with the requirements imposed by the South Carolina PSC.</p>	
Vern Colbert Dominion #1	<p>No</p> <p>RA should prevent an identified problem beforehand. He can only mitigate when there is an actual emergency.</p>
<p>The standard has been revised to include the following language: 'prevent or mitigate' to distinguish that these are two separate items.</p>	
Todd Lucas (6?) Southern Co #1	<p>No</p> <p>The RA itself cannot take direct action to prevent/mitigate potential problems. The requirement should be that the RA notify the responsible parties that can take direct action.</p>
<p>The RA may or may not be able to take direct action to resolve the problem. Where it does not, it is still accountable to insure that appropriate action is taken. If appropriate action is not taken, the non-compliance belongs to the RA. The standard has been revised to clearly indicate that the RA shall act or direct others to act.</p>	
Charles Yeung Reliant Energy #6	<p>No</p> <p>The RA must not act when there are market mechanisms available to mitigate/prevent the identified problem. This Standard must recognize that such congestion management processes will be accommodated by the RAs before RAs take actions. The Standard must coordinate with the business practice or standard th The requirement should be that the RA notify the responsible parties that can take direct action.</p>

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<p>The RA has the ultimate responsibility for resolving an identified problem by whatever means it has at its disposal. The RA will undoubtedly employ market mechanisms to uphold this responsibility but this standard will not require it to do so.</p>	
<p><b>No – Other comments</b></p>	
<p>William Smith Allegheny Pwr #1</p>	<p>No Requirement 212 and 213 are very similar. Requirement 212 applies to Reliability Authorities and requirement 213 applies to Transmission Operators. There should be some coordination so that the two entities don't take different actions.</p>
<p>The RAs will have the ultimate responsibility for compliance to this standard. The duplicate requirement for TOPs has been dropped from this standard.</p>	
<p>Ed Stein Joanne Borrell Ray Morella FirstEnergy #1, 3, 6  ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them.  It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.</p>
<p>The RAs will have the ultimate responsibility for compliance to this standard. The duplicate requirement for TOPs has been dropped from this standard.  Agreements between the RA and the TOP that delineates the authority of each with respect to reliability are expected to be required as part of Certification.</p>	
<p>Compliance Managers</p>	<p>There are two parts to the Requirement. The first is a requirement to use the monitoring and analysis information to prevent an OSL. If this is done, there are no further requirements since there are no violations.  The second part of the proposed requirement is to determine how well the entity rectified (mitigated) the situation after a violation occurred. This will be part of the report and possible investigation after a violation occurs, and therefore will be part of the process of Requirement #1.  Delete Requirement #12</p>
<p>Monitoring and analysis may also indicate that an IROL has been exceeded – and in this case actions are needed – there may or may not be a reportable violation.  Requirement 1 in the original draft standard was limited to monitoring – the requirement and measures did not include any reports.</p>	
<p><b>No – Comments suggesting specific changes</b></p>	
<p>Thomas Pruitt Duke #1</p>	<p>No Change the wording from “take actions necessary” to “direct actions necessary”. This requirement is actually 2 requirements – the action and documentation of the action. The requirement/measure should be separated into two separate requirements.</p>
<p>The standard was revised to reflect these suggestions. In the revised standard, the phrase, ‘act or direct others to act’ has been used because in some cases the RA may actually take the necessary actions.</p>	
<p>Doug Hills</p>	<p>No</p>

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Cinergy #1	Level four as needs to be rewritten to only include action not taken on the part of the RA and exclude items outside control.
<p>The standard supports the Functional Model’s concept that the RA has ultimate responsibility for protecting the reliability of the transmission system. The RA has many tools at its disposal to achieve its objectives. The standard holds the RA accountable for achieving results, not just for effort.</p>	
<p><b>No – Comments suggesting additional clarification needed</b></p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No</p> <p>Should not combine the terms “prevention” and “mitigation” in the same requirement/measure unless the language is clear to eliminate potential ambiguity. Prevention and mitigation are actions that may be undertaken in two different timeframes. Without clear language, the requirement/measure should be separated into two separate requirements to address the prevention and mitigation as separate issues.</p> <p>(SERC Only: This requirement and requirement 14 should be combined and rewritten to require that the RA have procedures in place that specifies actions needed to preserve reliable operation of the system.)</p>
<p>Prevention and Mitigation truly do occur in different time frames. The requirement has been modified to clearly indicate that the RA is trying to prevent or mitigate exceeding IROs.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No</p> <p>This requirement should be revised to clearly separate “prevent” and “mitigate” identified problems. This is also difficult to quantify. Suppose a next-hour contingency analysis is run based on expected load and generation and it shows a slight post-contingent overload. Then, the weather changes in the area of the overload, causing no overload (projected post-contingent) in real-time. Was this a Level 3 violation? The RA should forecast problems and observe the trajectory of the trends and then determine the appropriate course of action or inaction as the case may be.</p>
<p>Prevention and Mitigation truly do occur in different time frames. The requirement has been modified to clearly indicate that the RA is trying to prevent or mitigate exceeding IROs.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>The reference “to prevent” is related to real time monitoring and “mitigate” is related to operational planning analysis ? These requirements should be made clear.</p>
<p>Prevention and Mitigation truly do occur in different time frames. The requirement has been modified to clearly indicate that the RA is trying to prevent or mitigate exceeding IROs.</p>	

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<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>We agree with the overall intent of this requirement. However, additional language is required. It seems the only desired outcome of this requirement is that the RA have documentation. Shouldn't another desired outcome be that the system is operated reliably? Hence a key component missing is that of the RA directing the TOP or BA to take action, as the RA typically cannot take any actions other than to give directives.</p> <p>Should the concern be limited to monitoring only those levels of thermal overloads and/or voltage conditions that lead to catastrophic events?</p> <p>How does this requirement fit with the current NERC TLR process?</p> <p>Suggested revisions noted below:  <b>Requirement 12:</b>  The Reliability Authority (RA) shall use the results of real time monitoring and/or reliability analyses to take <b>and direct</b> actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The RA shall document actions taken <b>or directed</b>.</p> <p><b>Measure(s):</b>  Documentation showing that actions were taken <b>or directed</b> to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p><b>Outcome(s) (100% Compliance):</b>  The RA shall document actions taken <b>or directed</b> to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p>
<p>The standard has been revised to more clearly indicate that the RA may act or may direct others to act. The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The SDT interpreted this to mean that this standard should focus on those system operating limits that, if exceeded, would lead to instability, uncontrolled separation or cascading outages.</p> <p>TLR is a procedure. This standard does not reference or require the use of any specific procedure.</p> <p>The scope of the SAR , as identified in its purpose, indicates that this standard will be limited to those limit violations that could lead to catastrophic events.</p>	
<p>Ed Riley CA ISO #2</p>	<p>No</p> <p>See response to #28.</p> <p><i>{ The types of reports that would be needed to identify “problems that could cause instability, uncontrolled separation or cascading outages..” are not done quickly, making it difficult to perform them in real-time. The wording of the Requirement sounds like these would be required in real-time, and it is not possible for a RA to complete them in this time-frame.}</i></p>
<p>The requirement for performing analyses was revised to clarify what was meant by ‘reliability analyses’. The term ‘reliability analysis’ was replaced with operational planning analyses and real time assessments – with different measures for each of these types of assessments.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No</p> <p>The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation ore cascading outages. See comments to question no. 10 above.</p> <p><i>{I am very confused by this Standard. Who is going perform these functions the TOP or the RA. The Standard appears to have both performing the same</i></p>

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	<p><i>function. The Standard needs to define the relationship between the RA and TOP. Maybe that could be accomplished in a opening paragraph. The requirements on the limits may be too broad. For example, an operating limit should also protect the safety of the public. If a facility was loaded to the point where it no longer met clearance requirements, the RA should respect these limits. The standards also seem to ignore voltage limits. There are limits to how high or low the voltage should be allowed to go before action is required. In addition to steady-state voltages, there should be a limit on transient voltages as well. It is not clear from this standard that these limits apply.}</i></p>
<p>The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The SDT interpreted this to mean that this standard should focus on those system operating limits that, if exceeded, would lead to instability, uncontrolled separation or cascading outages.</p> <p>Industry comments have indicated that the RA should be assigned these responsibilities, not the TOP. This delineation of responsibility is clarified in the revised standard.</p> <p>The scope of this standard must remain within the scope of the approved SAR. The purpose of this standard is to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The standard was revised to clarify that it addresses just the subset of system operating limits that are called, 'interconnection reliability operating limits' or IROLs. These are the limits that, if exceeded, can result in instability, uncontrolled separation, or cascading outages.</p> <p>The standard was also revised to clarify that the RA is responsible for performing reliability analyses of its reliability area – not the TOP. The duplicate requirements for the TOP have been dropped from this standard.</p>	
<p><b>Yes – Comments suggesting additional clarifications</b></p>	
Richard Schwarz PNSC #2	<p>Yes The RA should direct rather than take action.</p>
<p>The RA may or may not be able to take direct action to resolve the problem. Where it does not, it is still accountable to insure that appropriate action is taken. If appropriate action is not taken, the non compliance belongs to the RA. The standard has been revised to more clearly indicate that the RA may act or may direct others to act.</p>	
Toni Timberman BPA #1	<p>Yes Functional Model requires RA to “direct” actions rather than “take” actions. TOP or BA would be the entities actually “taking” action. Again, need to know definition of “problems”. Is there a requirement for 3-year retention of information associated with this requirement?</p>
<p>The RA may or may not be able to take direct action to resolve the problem. Where it does not, it is still accountable to insure that appropriate action is taken. If appropriate action is not taken, the non compliance belongs to the RA.</p> <p>The standard has been revised to more clearly indicate that the RA may act or may direct others to act.</p> <p>The standard has been revised to more clearly indicate that the ‘problems’ being addressed are “IROL violations.” The draft standard omitted an indication of how long the RA needs to retain data – this has been added to the revised standard.</p> <p>Currently regional compliance managers conduct performance audits of each control area once every three years. Assuming that the same cycle is retained for auditing RAs, the three year retention ensures that there will be some data available when each entity is audited.</p>	
Kathleen Goodman ISO NE #2	<p>Yes Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.</p>

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<p>The standard has been revised to make a more clear distinction between prevention and mitigation. The revised standard focuses more on the use of the results of analyses than on which type of analysis presented the RA with the data it needed to take action.</p>	
<p>James Stanton Calpine #5</p>	<p>Yes Would like to see language in the Measure to the effect this documentation of actions taken will be readily available to all participants. This would help insure that potential discriminatory actions do not occur, and if they do, will be discoverable. If it is not readily available then the RA is non-compliant. The Measure and Non-compliance levels should also contain a time period when the documentation will be available.</p>
<p>The suggestion that the documentation be made available to all participants was not incorporated because there doesn't seem to be a reliability-related need for this. If there is a reliability-related need for the sharing of these documents, please clearly specify what that reliability need is when the revised standard is re-posted.</p>	
<p>Peter Burke ATC #1</p>	<p>Yes The need is clear and the TLR process is a first step in tracking these kinds of activities. This could be worded more carefully to describe "documentation" that is reasonable and applicable in the normal course of business without being open to an interpretation requiring extraordinary and unreasonable documentation.</p>
<p>The requirement has been revised to indicate that any documentation may be used as long as it shows the RA's actions or directives, and the magnitude and duration of the event.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>Yes It should be noted that prevention and mitigation are actions that may be undertaken in two different timeframes.</p>
<p>Prevention and Mitigation truly do occur in different time frames. The requirement has been modified to clearly indicate that the RA is trying to prevent or mitigate exceeding IROs.</p>	
<p><b>Yes – Other comments</b></p>	
<p>Albert M. DiCaprio MAAC #2</p>	<p>Yes As written this requirement mandates the RA to take action (while at the same time leaving the procedures, services and processes up to the individual RAs). The requirement also allows preventive and well as corrective actions to be taken</p>
<p>This is what was intended. Several commenters suggested improvements to clarify what was intended and they have been incorporated into the revised standard.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes We do support this requirement, but have concern about the type of documentation that is contemplated. This may need to connect back to the work of the OLDTF and what is reportable or not. We would not support keeping a lot of documentation for things that are not reportable. Documentation can be costly and we do not favor doing it unnecessarily. Regions may already have documentation requirements so we would like to see more details on what is envisioned here.</p>

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In this requirement, the RA must document the actions or directives issued to prevent or remedy the situation. This requirement was revised to add a measure that requires completing an IROL violation report for each instance of exceeding an IROL for a time greater than or equal to the IROL's T<sub>v</sub>. These requirements are different from those proposed by the OLDTF. The OLDTF does not have a T<sub>v</sub> for each IROL – instead the OLDTF proposes reporting each incident where an IRL is exceeded for 30 minutes.

OLDTF (9?) 6 - #2 1 - #1,5	Yes Agrees with OLDTF report.
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There are some differences between what is being proposed and what was proposed by the OLDTF, however conceptually they are very similar.

Alan Johnson Mirant #6 Bob Burkard NCMPA1 # 3,4,5 Darrel Richardson Illinois Power #1, 3 Dilip Mahendra SMUD #1 Francis Halpin BPA Bus Line #5,6 Fred Frederick Vectren #3 Gerald Rheault Manitoba #1,3,5,6 Joe Minkstein PG&E #5 John Blazekovich Exelon #1,3,5,6 Joseph Buch Madison #4 Karl Kohlrus CWL&P #5 Kim Warren IMO #2 Lee Westbrook Oncor #1 Lloyd Linke MAPP #2 Mike Miller Southern Co #1 Richard Kafka Pepco #1 Roger Green Southern Co #5 Roman Carter So Co Gen 3,5,6 (6 members) Sam Jones ERCOT #2 Stuart Goza TVA #1 Tom Petrich (5) PG&E #1 Tony Jankowski We-Energies #4	Yes
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**33. Requirement 12 – Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Not Applicable</li> <li>2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred</li> <li>3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred</li> <li>4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system</li> </ol>
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<p><b>Revised Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. <b>Interconnection reliability operating limit exceeded and no documentation to indicate actions taken or directives issued to mitigate the instance</b></li> <li>2. <b>Not applicable</b></li> <li>3. <b>Not applicable</b></li> <li>4. <b>Interconnection reliability operating limit exceeded for time greater than or equal to <math>T_v</math> minutes</b></li> </ol>
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**Summary Consideration:**

The levels of non-compliance have been revised to insure that there are distinguishable differences between all levels. There was a typographical error in the first draft of the standard that made levels 2 and 3 identical.

<b>No – Comments indicating Levels 2 and 3 are the same</b>	
FRCC 6-#1, 4-#2, 1-#2	No We are not sure what the difference is between level 2 and level 3. Also, if the RA gave direction to a TOP or BA to implement a mitigation plan, and the TOP or BA did not do it in time, who would the non-compliant party be? The RA's responsibility it to monitor and take action, which could be giving direction to some other entity, so it would seem like the noncompliance levels need to focus on did the RA do what they should do, or not.
<p>There was a typographical error in the first draft of the standard and there was no difference between Levels 2 and 3.</p> <p>The intent is to hold the RA responsible for achieving the goal of protecting the integrity of the interconnected bulk transmission system. The RA has many options at its disposal, and if the RA doesn't execute those options in time to prevent instability, uncontrolled separation or cascading outages that affect the reliability of the bulk transmission system, the RA should be held accountable.</p>	
Alan Boesch NPPD #1	No What is the difference between two and three? If it is the difference between documenting and reporting a violation (the amount of time over the limit), this needs to be clarified in the standard. The items in No. 4 need to be expanded based on comments to question No. 10.
<p>There was a typographical error in the first draft of the standard and there was no difference between Levels 2 and 3.</p>	



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Sam Jones ERCOT #2OLDTF (9?) 6 - #2 1 - #1,5	No Level 2 and 3 appear to be the same.
There was a typographical error in the first draft of the standard and there was no difference between Levels 2 and 3.	
John Blazekovich Exelon #1,3,5,6	No Do not understand the difference between items 2 & 3 – clarification is needed.
There was a typographical error in the first draft of the standard and there was no difference between Levels 2 and 3.	
Thomas Pruitt Duke #1	No What is the difference between levels 2 and 3?
There was a typographical error in the first draft of the standard and there was no difference between Levels 2 and 3.	
Kathleen Goodman ISO NE #2	No Levels two and three appear to be identical.
There was a typographical error in the first draft of the standard and there was no difference between Levels 2 and 3.	
Tom Petrich (5) PG&E #1	No Non-compliance Levels 2 and 3 do not seem reasonable. For example, during emergencies, the correct action may be “no action”. In any case, if no limit violation has occurred, what is the basis of the “non-compliance”. They should be changed to “not applicable”.
The standard has been revised to recognize that “no action” is a definite, definable action. The RA is required to act or direct others to act based on the results of analyses. If an RA ignores the results of an analysis and no violation occurs, the RA hasn’t met all of the requirements in this standard, and there should be some penalty.	
No – Comments indicating levels of non-compliance inappropriate	
Todd Lucas (6?) Southern Co #1	No The levels of compliance should be tailored to the requirement for notification by the RA to prevent/mitigate OSLVs and/or instability, uncontrolled cascading, etc. Consideration should be given to combining requirements 12 & 14.
This is an issue that has arisen in other standards as well. Under the Functional Model, the RA has ultimate responsibility for reliability and needs to take whatever action needed to protect the reliability of the interconnected bulk electric system. We will ask the industry for feedback on this position. The recommendation that requirements 12 and 14 be combined may be adopted in the third draft of this standard. There were so many suggestions for revisions, that the SDT felt another posting with the requirements separated would be helpful before trying to combine the requirements.	
Gerald Rheault Manitoba #1,3,5,6	No The issue should not be one of violation not occurring because the contingencies considered didn’t happen. The issue should be one of risk and recognition of the impacts of the contingencies such that operation must be to limits based on these contingencies.

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<p>The standard has been revised to add more emphasis to preventing instances of exceeding IROLs. The standard The standard has been revised to recognize that “no action” is a definite, definable action. The RA is required to act or direct others to act based on the results of analyses. If an RA ignores the results of an analysis and no violation occurs, the RA hasn’t met all of the requirements in this standard, and there should be some penalty.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No These compliance measures do not recognize the accommodation and coordination with market mechanisms to achieve the reliability objective.</p>
<p>The standard is intended to define what must be accomplished – it will not address how to accomplish operating within limits.</p>	
<p>Joseph Buch Madison #4</p>	<p>No Level 4 as presently defined indicates that instability, uncontrolled separation or cascading outages have already occurred. This might be akin to locking the barn after the horse is out. We should be a level 4 if the potential exists, not after it happened.</p>
<p>The other levels of non-compliance are intended to be severe enough that they encourage compliance.</p>	
<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1, 3, 6</p>	<p>No We agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. We don’t think that the Reliability Coordinator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.</p>
<p>This is an issue that has arisen in other standards as well. Under the Functional Model, the RA has ultimate responsibility for reliability and needs to take whatever action needed to protect the reliability of the interconnected bulk electric system. We will ask the industry for feedback on this position.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don’t think that the Reliability Coordinator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action. For instance, if the Reliability Coordinator ordered a Balancing Authority to drop load because of low or declining frequency and the Balancing Authority did not drop the load, then the level 4 non-compliance should be charged to the Balancing Authority not the Reliability Coordinator.</p>
<p>This is an issue that has arisen in other standards as well. Under the Functional Model, the RA has ultimate responsibility for reliability and needs to take whatever action needed to protect the reliability of the interconnected bulk electric system. We will ask the industry for feedback on this position.</p>	
<p><b>No – Comments indicating requirement is inappropriate</b></p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>No NERC does not have the authority to require RAs to take action on TSP equipment for which they are not allowed to have functional control</p>
<p>These new reliability standards are being drafted in support of the Functional Model. Under the Functional Model, the reliability authority has responsibility for protecting the reliability of the transmission system – and the transmission operator has responsibility for protecting the reliability of local networks. SCE&amp;G may serve as both an RA and a TSP – this is totally acceptable under the Functional Model. If this is true, there is no conflict with the requirements imposed by the South Carolina PSC.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No Level four as needs to be rewritten to only include action not taken on the part of the RA and exclude items outside control.</p>

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<p>This is an issue that has arisen in other standards as well. Under the Functional Model, the RA has ultimate responsibility for reliability and needs to take whatever action needed to protect the reliability of the interconnected bulk electric system. We will ask the industry for feedback on this position.</p>	
<p><b>No – Comments indicating addressing non-compliance is premature</b></p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No It is premature to develop compliance levels at this time.</p>
<p>It is important that entities responsible for compliance understand the ramifications of compliance as well as the standard itself. The standard, therefore, will contain compliance requirements along with the standard itself. This principle is inherent in the development of all new standards.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No Question 32 needs to be addressed and resolved before the levels of non-compliance can be determined.</p>
<p>The associated requirement was adjusted to differentiate between 'mitigation and prevention'.</p>	
<p>Ed Riley CA ISO #2</p>	<p>No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p><b>No – Mix of comments</b></p>	
<p>Peter Burke ATC #1</p>	<p>No Should entities be penalized for things that might have happened but didn't? How much faith do we place in analysis results? If an overload would have been 1% over rating and nothing happened, is that a problem. 5%? 10%? If something happens, some type of penalty/written reprimand should be issued with a lesson learned follow-up to make sure it does not happen again. Hopefully a system isn't created that discourages people from reporting problems to avoid fines and thereby miss the opportunity to analyze a problem to prevent it in the future.  Level 3 non-compliance doesn't appear to be different from level #2.  Level 4 non-compliance should forgive extraordinary and severe causes as follows: System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system without the influence of severe storms, sabotage, or other extraordinary conditions.</p>
<p>System Operators rely upon the results of analyses to support their actions. If the analyses are suspect, then the System Operators need to gather additional data to support whatever operating decisions are made.  There was a typographical error in the first draft of the standard that made levels 2 and 3 identical. The intent of the differences between levels 2 and 3 has been clarified in the revised standard.  The suggestion for excluding extraordinary situations has not been adopted. The SDT sought legal advice on including this language in each standard and the recommendation was to handle those unique situations with special exemptions or waivers.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No Level 2 states "no actions or incorrect actions were taken . . ." The determination that the RA's actions were incorrect would be by after the fact analysis performed by whom? Additionally, would it be necessary to determine whether the actions taken were due to gross negligence or due to an "honest" error or</p>

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	<p>misinterpretation of the data? Would non-compliance sanctions differ based upon gross negligence vs. honest error?</p> <p>We are not sure what the difference between Level 2 and Level 3 is. Please clarify.</p> <p>Some “what ifs”: What if the system operating limit (SOL) was violated and thus the bulk transmission system was at risk but actual instability, uncontrolled separation, or cascading outages did not occur? What level of non-compliance should this be?</p> <p>What if the SOL was violated, and the RA had directed the TOP and/or BA to take action but the TOP and/or BA did not take the action? As stated above, the RA is non-compliant. But, in reality the TOP and/or BA should be found non-compliant.</p> <p>What if the SOL is violated, and the RA has directed the TOP and/or BA to take action, and they are in the midst of taking that action, but prior to the action being fully implemented, instability, uncontrolled separation or cascading outages occur? Is anyone non-compliant and if so at what level?</p>
<p>See summary consideration. The standard was modified to recognize that “no action” is a definite, definable action.</p> <p>This standard has another requirement that includes having specific action plans to follow (or to direct others to follow) to prevent exceeding IROLs or to return to an operating state where an IROL isn’t exceeded. These action plans can be reviewed against operating logs and other documents to see if they were followed. In the revised standard, the requirements to monitor, analyze, and direct actions are combined into a single requirement.</p> <p>There was a typographical error in the first draft of the standard that made levels 2 and 3 identical. The intent of the differences between levels 2 and 3 has been clarified in the revised standard.</p> <p>The issue of penalizing the RA if it directed others to take actions but there was still an IROL violation that led to instability, etc. is an issue that has arisen in other standards as well. We will highlight this issue and ask the industry for feedback.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No</p> <p>In general, this requirement is somewhat subjective and difficult to quantify. Operators will become unnecessarily conservative in order to meet this requirement.</p> <p>Also, levels 2 and 3 of non-compliance must be revised, they are exactly the same.</p> <p>Level 2 should read something like – “Monitoring and/or reliability analyses identify a potential problem – no actions, or incorrect actions, were taken but no limit violation “.</p> <p>Level 3 should read something like – “Monitoring and/or reliability analyses identified a problem, actions were taken but were not sufficient to mitigate the problem, but no instability, uncontrolled separation or cascading outages occurred.</p> <p>Level 4 seems OK.</p>
<p>There was a typographical error in the first draft of the standard that made levels 2 and 3 identical. The levels of non-compliance were adjusted to separate out reporting from an IROL violation. There is a minor sanction for not owning up to the violation – and a more severe sanction for actually violating the limit. Assessments of the correctness of actions taken may be very difficult to assess unless they are blatant.</p>	
<p><b>No – Comments indicating additional clarification needed</b></p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>No</p> <p>It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be</p>

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David Kiguel Hydro One #1	made whether these levels are appropriate. Further clarification is requested regarding the difference between violation and limit violation.
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p> <p>The language in the revised standard distinguishes between violations that must be documented and those that must be reported. As revised, only those violations that have a duration that is equal to or greater than the IROL's <math>T_v</math> must be reported to the compliance monitor.</p>	
Vern Colbert Dominion #1 Fred Frederick Vectren #3	No
<b>Yes – Mix of comments</b>	
Toni Timberman BPA #1	<p>Yes/No</p> <p>Suggest revising as follows:</p> <ul style="list-style-type: none"> <li>(6 Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no reportable violations occurred</li> <li>(6 Monitoring and/or reliability analyses identified a problem – correct action was taken but not to the extent necessary. Reportable violation occurred.</li> <li>(6 Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken. Reportable violation occurred</li> </ul> <p>4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system</p>
<p>The levels of non-compliance were adjusted to separate out reporting from an IROL violation. There is a minor sanction for not owning up to the violation – and a more severe sanction for actually violating the limit. Assessments of the correctness of actions taken may be very difficult to assess unless they are blatant.</p>	
<b>Yes – Comments suggesting additional clarification</b>	
Richard Schwarz PNSC #2	<p>Yes</p> <p>Levels of non-compliance should measure whether or not the RA identified a reliability problem, were actions (correct or incorrect) taken, and did a reportable violation occur</p>
<p>The levels of non-compliance were adjusted to separate out reporting from an IROL violation. There is a minor sanction for not owning up to the violation – and a more severe sanction for actually violating the limit. Assessments of the correctness of actions taken may be very difficult to assess unless they are blatant.</p>	
Tony Jankowski We-Energies #4	<p>Yes</p> <p>#2 should state that a system operating limit was exceeded, but no violation. #3 should state that a system operating limit violation occurred.</p>
<p>The levels of non-compliance were adjusted to separate out reporting from an IROL violation. There is a minor sanction for not owning up to the violation – and a more severe sanction for actually violating the limit. This standard's purpose is to prevent violating an IROL – if an IROL is exceeded it may have a severely negative impact on the reliability of the interconnection – and should have a Level 4 sanction.</p>	
Albert M. DiCaprio MAAC #2	<p>Yes</p> <p>There is a definite need here to recognize that NO ACTION “can be” a definitive activity (ergo not to be held as a non-compliance indicator)</p>

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<p>The standard was modified to recognize that “no action” is a definite, definable action.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes “Problem” is too vague. Also, this should not be tied solely to instability, uncontrolled separation, or cascading... other operating limits also need to be consistently adhered to. System Operating Limit should be in caps to be consistent with the definition on page 2.</p>
<p>The standard has been modified to clarify that ‘problem’ means an IROL violation. The scope of this standard must remain within the scope of the approved SAR. The purpose of this standard is to prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The format adopted for new Reliability Standards limits capitalization to proper nouns.</p>	
<p>Yes – Comments suggesting Levels 2 and 3 are identical</p>	
<p>Darrel Richardson Illinois Power #1, 3</p>	<p>Yes We agree with the levels, however we are curious as to the difference between Level 2 and Level 3. If these mean the same, then one should be eliminated. Perhaps there should be a definition of both a “limit violation” and “violation”.</p>
<p>There was a typographical error in the first draft of the standard that made levels 2 and 3 identical.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Yes But...is there really a substantive difference between level 2 and level 3? Should three read “..no reportable violation occurred”????</p>
<p>There was a typographical error in the first draft of the standard that made levels 2 and 3 identical.</p>	
<p>Kim Warren IMO #2</p>	<p>Yes A more descriptive or clearer definition is required to differentiate between level 2 and level 3.</p>
<p>There was a typographical error in the first draft of the standard that made levels 2 and 3 identical.</p>	
<p>Alan Johnson Mirant #6 Bob Burkard NCMAPA1 # 3,4,5 Dilip Mahendra SMUD #1 James Stanton Calpine #5 Joe Minkstein PG&amp;E #5 Karl Kohlrus CWL&amp;P #5 Mike Miller Southern Co #1 Richard Kafka Pepco #1 Roman Carter So Co Gen 3,5,6 (6 members) Stuart Goza TVA #1 William Smith Allegheny Pwr #1</p>	<p>Yes</p>

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**34. Requirement 13 – Do you agree with this requirement and its associated performance/outcome and measure/s?**

<p><b>Original Requirement</b></p> <p>The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The TOP shall document actions taken.</p> <p><b>Measure(s)</b></p> <p>Documentation showing that actions were taken to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p><b>Outcome(s)</b></p> <p>The TOP shall document actions taken to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p>
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**Revised Requirement: None**

**Summary Consideration:**

Based on the comments submitted and a review of the Functional Model, the SDT removed this requirement from this standard.

Under the Functional Model, this requirement is assigned solely to the RA. The TOP is responsible for local network integrity, not the integrity of the interconnected bulk electric system. The TOP works under the direction of the RA.. Here is a subset of what is included for the TOP in the Functional Model:

- Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations
- Operates transmission system facilities under direction of the Reliability Authority
- Requests Reliability Authority to mitigate Operating Reliability Limit violations. (e.g., re-dispatch, transmission loading relief)
- Implements reliability measures as directed by Reliability Authority

<b>No – Comments indicating requirement is inappropriate</b>	
Toni Timberman BPA #1	No TOP has no responsibility for the bulk transmission system. Functional Model says that “Transmission Operator under the Reliability Authority’s direction can take action, such as implementing voltage reductions, to help mitigate an Energy Emergency.” This does not indicate that the TOP can react unilaterally based on real-time monitoring or reliability analyses.
This requirement was removed from this standard.	
Albert M. DiCaprio MAAC #2	No This is an RA responsibility. Of course the RA may assign that function to the TOP (but in the end the RA is still the responsible party)
This requirement was removed from this standard.	
Alan Johnson	Question whether this is fully compliant with the Functional Model. Shouldn’t the

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Mirant #6	TOP take direction from the RA regarding the implementation of reliability matters? Or does it take direction from the RA and have the responsibility to act independently and report its actions to the RA?
This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.	
Compliance Managers	RA does analysis of power system. The TOP shall implement actions in very few cases (line switching control actions and load shedding). If the TOP is to held to this requirement then there better be one for each of the other entities that the RA directs to take action (BA, IA, Generator Operators, LSE, etc.)  Delete this requirement
This requirement was removed from this standard.	
No – Comments suggesting requirement needs modification	
Susan Morris SERC #2 Thomas Pruitt Duke #1 Robert Reed TS (See List)	No See 32. How are conflicting results from an RAs analysis vs. the TOPs analysis to be resolved?  { Should not combine the terms “prevention” and “mitigation” in the same requirement/measure unless the language is clear to eliminate potential ambiguity. Prevention and mitigation are actions that may be undertaken in two different timeframes. Without clear language, the requirement/measure should be separated into two separate requirements to address the prevention and mitigation as separate issues.  (SERC Only: This requirement and requirement 14 should be combined and rewritten to require that the RA have procedures in place that specifies actions needed to preserve reliable operation of the system.)}
This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.	
Vern Colbert Dominion #1	No See #32. The TOP should resolve an identified problem with the cooperation of the RA.  { RA should prevent an identified problem beforehand. He can only mitigate when there is an actual emergency.}
This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system. Note that the revised requirement for the RA does distinguish between mitigation and prevention.	
Charles Yeung Reliant Energy #6	No It is unclear what the relationship and responsibilities of the TOP are as compared to the RA. The Standard proposes the same language for both functions. What is the reporting relationship and operational hierarchy between the RA and the TOP? Is the TOP analysis more “local” in nature than the RA analysis? What if each one’s analysis does not agree? Which analysis will prevail to ensure grid reliability?
This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.	
FRCC 6-#1, 4-#2, 1-#2	No See our comment on requirement 4.  { In requirement 3, the RA has already determined what data it needs for reliability analyses and system monitoring. It appears to be redundant to have the TOP do the same thing.



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	<p><i>Would it be more appropriate for the TOP to have a requirement to provide the requested data to the RA and then be measured in how they perform that?}</i></p> <p>Again, this seems redundant to what the RA is doing via requirement 12. It would seem more appropriate to have the TOP have a requirement to work with the RA in providing mitigating plans and taking actions as directed by the RA.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>The system operating limits addressed in this standard are under the responsibility of the RA, so all duplicate requirements assigned to the TOP have been eliminated from the revised standard.</p>	
<p>William Smith Allegheny Pwr #1</p>	<p>No</p> <p>Requirement 212 and 213 are very similar. Requirement 212 applies to Reliability Authorities and requirement 213 applies to Transmission Operators. There should be some coordination so that the two entities don't take different actions.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p>	
<p>Ray Morella Ed Stein Joanne Borrell FirstEnergy #1, 3, 6</p> <p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>Requirements 212 and 213 are very similar. Requirement 212 applies to Reliability Coordinators. Requirement 213 applies to Transmission Operators. The requirements are duplicative. The standard should require actions be taken to prevent/mitigate identified problems by either the Reliability Coordinator or the Transmission Operator, but not both of them. It should be clear in the agreement between the Transmission Operator and their Reliability Coordinator who has authority to take the action to correct or mitigate a problem. Having two different entities responsible to take action to correct a problem is troublesome. The possibility exists that the two entities may decide on different courses of action to solve the problem. Valuable minutes may be squandered by the two different entities attempting to coordinate actions. Only one entity should have the responsibility to take action and that responsibility needs to be clearly delineated.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>The authority between the RA and the TOP should be addressed as part of the certification for both the RA and the TOP. As envisioned, the certification requirements would include a written document that identifies the authorities of the RA and the TOP with respect to one another.</p>	
<p>Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>Yes/No</p> <p>This Requirement does not adequately address the coordination that must take place between the TOP and the RA. Furthermore, the TOP may not include a wide enough scope to determine these limits.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No</p> <p>Comments to Requirement 12 apply here also.</p> <p><i>{This requirement should be revised to clearly separate “prevent” and “mitigate” identified problems. This is also difficult to quantify. Suppose a next-hour contingency analysis is run based on expected load and generation and it shows a slight post-contingent overload. Then, the weather changes in the area of the overload, causing no overload (projected post-contingent) in real-time. Was this a Level 3 violation? The RA should forecast problems and observe the trajectory</i></p>

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	<i>of the trends and then determine the appropriate course of action or inaction as the case may be.}</i>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.          Note that the revised requirement for the RA does distinguish between mitigation and prevention.</p>	
Ed Riley CA ISO #2	<p>No          See response to question #28.  <i>{ The types of reports that would be needed to identify “problems that could cause instability, uncontrolled separation or cascading outages . . . “ are not done quickly, making it difficult to perform them in real-time. The wording of the Requirement sounds like these would be required in real-time, and it is not possible for a RA to complete them in this time-frame.}</i></p>
<p>The requirement for performing analyses was revised to clarify what was meant by ‘reliability analyses’. The term ‘reliability analysis’ was replaced with operational planning analyses and real time assessments – with different measures for each of these types of assessments.</p>	
Doug Hils Cinergy #1	<p>No          Needs to be rewritten to include only lack of action on the part of the TOP.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p>	
David Kiguel Hydro One #1	<p>No          It should be noted that prevention and mitigation are actions that may be undertaken in two different timeframes. Please see our comments under item # 44 (Regional and Interconnection Differences).  <i>{There are differences in some Areas. For example, in Ontario the IMO is solely responsible to determine operating limits and to direct the operation of the IMO-Controlled Grid within these limits. The Transmission owners/operators operate thir respective systems under the IMO’s direction. They only provide the IMO with equipment ratings which the IMO must respect. The transmission operators do not determine operating limits or monitor/report their compliance.          The standard should reflect jurisdictional differences in the responsibilities assigned to the RA and TOP in some areas. }</i></p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.          Note that the revised requirement for the RA does distinguish between mitigation and prevention.</p>	
Raj Rana AEP #1,3,5,6	<p>No          We believe having the duplicity of Requirement #12 and #13 is dangerous and could impede system reliability. The NERC reliability standards need to be clear where the authority resides. Having duplicate requirements for the RA and the TOP implies neither has the final say. The RA should and must have the final say. This requirement for the TOP needs to be reworded to show their subordinate role to the RA. The TOP shall follow the directives of the RA in order to prevent/mitigate identified problems.          How does this requirement fit with the current NERC TLR process?          Should the concern be limited to monitoring only those levels of thermal overloads and/or voltage conditions that lead to catastrophic events?          Suggested revisions:  <b>Requirement 13:</b>          The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses <b>performed by either the RA or TOP</b>, to take actions <b>or follow</b></p>

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	<p><b>directives of the RA</b> as necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>The TOP shall document actions taken.</p> <p><b>Measure(s):</b></p> <p>Documentation showing that actions were taken <b>or RA directives followed</b> to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p><b>Outcome(s) (100% Compliance):</b></p> <p>The TOP shall document actions taken <b>or RA directives followed</b> to mitigate/prevent identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>The revised requirement for the RA clearly indicates that the RA may act or may direct others to act.</p> <p>The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The SDT interpreted this to mean that this standard should focus on those system operating limits that, if exceeded, would lead to instability, uncontrolled separation or cascading outages.</p> <p>TLR is a procedure. This standard does not reference or require the use of any specific procedure.</p> <p>The scope of the SAR , as identified in its purpose, indicates that this standard will be limited to those limit violations that could lead to catastrophic events.</p> <p>Another requirement was added to this standard that addresses your concern about requiring the TOP to follow the RA's directives. The new requirement is for the TOP, IA, and BA and requires them to follow the RA's directives relative to IROLs.</p>	
<p>Richard Kafka Pepco #1 Fred Frederick Vectren #3</p>	<p>No</p>
<p><b>Yes – Comments indicating need for additional clarifications</b></p>	
<p>Alan Boesch NPPD #1</p>	<p>Yes/No</p> <p>The measures and outcomes should be related to violating System Operating Limits and not be limited to instability, uncontrolled separation ore cascading outages. See comments to question no. 10 above.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p>	
<p>Kim Warren IMO #2</p>	<p>Yes/No</p> <p>Yes ,only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles(eg. Switching,maintenance,outage &amp; construction notification) that the Functional Model defines for the TOP.</p> <p>Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.</p>

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<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>The work of the OLDTF was considered in the revisions to this standard. While the concepts in the OLDTF report are very similar to the objectives of this standard, there are some significant differences.</p> <p>The SDT is doing its work as part of an open standards development process and will utilize the work of the OLDTF to the extent that its work is available and is submitted in response to public postings of the draft standard. The SDT will not wait for the OLDTF or any other group to complete its work.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>Yes/No</p> <p>The reference to prevent is related to real time monitoring and mitigate is related to operational planning analysis ? These requirements should be made clear.</p>
<p>This requirement was removed from this standard.</p> <p>In the revised standard's requirement for the RA, there is a much more clear distinction between conducting operational planning analyses and real-time assessments.</p>	
<p>Peter Burke ATC #1</p>	<p>Yes</p> <p>This could be worded more carefully to describe "documentation" that is reasonable and applicable in the normal course of business without being open to an interpretation requiring extraordinary and unreasonable documentation.</p> <p>There is a need for the TOP to take actions, however, the TOP should coordinate with the RA, where possible. The level of documentation should not be as rigid as that applied to the RA.</p> <p>Referring to similar comments in reply to question 12, a basic analysis tool set (SE, SA, and PF) should be running at the TOP shop. The more advanced tools like voltage stability, transient stability, etc. may be better suited to the RAs. The TOP may be the primary party responsible for maintaining reliable operation of the transmission system and, as such, should document steps taken to prevent problems using the available diagnostic tools. This does not include instability, or uncontrolled separation as these would be identified by more advanced tools first.</p>
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>The documentation required has been more clearly identified in the revised requirement for the RA. The intent is to have enough documentation available to show what happened, without requiring a lot of additional work.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>Yes</p> <p>It should be noted that prevention and mitigation are actions that may be undertaken in two different timeframes.</p>
<p>This requirement was removed from this standard.</p> <p>In the revised standard's requirement for the RA, there is a much more clear distinction between conducting operational planning analyses and real-time assessments.</p>	
<p>John Blazekovich Exelon #1,3,5,6</p>	<p>Yes</p> <p>Although we agree with the need for the requirement we find the wording of this requirement to be somewhat ambiguous. The wording suggests that the RA or TOP will not take action unless instability or cascading outages are at risk. We believe that the intent should be to analyze "Planned for Contingencies" and identify problems, including equipment overloads above emergency limits, if any are found, but the wording does not state this.</p>
<p>This requirement was removed from this standard.</p> <p>In the revised standard's requirement for the RA, there is a much more clear distinction between conducting operational planning analyses and real-time assessments.</p>	

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Kathleen Goodman ISO NE #2	Yes Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>The identical requirement for the RA has been revised to make a more clear distinction between prevention and mitigation. The revised standard focuses more on the use of the results of analyses than on which type of analysis presented the RA with the data it needed to take action.</p>	
Gerald Rheault Manitoba #1,3,5,6	Yes Manitoba Hydro believes that TOP actions should be subject to RA oversight and approval for any actions that are identified as possibly adversely impacting the reliability of the bulk transmission system.
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p>	
Francis Halpin BPA Bus Line #5,6	Yes The and/or language implies that monitoring is sufficient and other more sophisticated analysis tools are optional. This is appropriate language which will allow smaller TOP's to be compliant.
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>Some commenters disliked the and/or and this was changed to distinguish between mitigation and prevention.</p>	
Tom Petrich (5) PG&E #1	Yes The TOP needs to take necessary actions to prevent equipment overloads as well.
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p> <p>The system operating limits addressed by the TOP are not the limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. The subset of system operating limits addressed in this standard (IROLs) are under the authority of the RA.</p>	
Stuart Goza TVA #1	Yes Action taken must be coordinated with RA.
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p>	
Todd Lucas (6?) Southern Co #1	Yes Need to clarify how conflicting results from an RAs analysis vs. the TOPs analysis will be resolved
<p>This requirement was removed from this standard. Under the Functional Model, the TOP takes direction from the RA regarding actions to protect the reliability of the transmission system.</p>	

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<p>Bob Burkard NCMPA1 # 3,4,5          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          James Stanton Calpine #5          Joe Minkstein PG&amp;E #5          Joseph Buch Madison #4          Karl Kohlrus CWL&amp;P #5          Lee Westbrook Oncor #1          Lee Xanthakos SCE&amp;G #1          Lloyd Linke MAPP #2          Mike Miller Southern Co #1          Roger Green Southern Co #5          Roman Carter So Co Gen 3,5,6 (6 members)          Tony Jankowski We-Energies #4</p>	<p>Yes</p>
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**35. Requirement 13 – Do you agree with these levels of non-compliance for this requirement?**

<b>Original Levels of Non-compliance</b>
1. Not Applicable
2. Monitoring and/or reliability analyses identified a problem – no actions or incorrect actions were taken but no limit violations occurred
3. Monitoring and/or reliability analyses identified a problem – no actions (or incorrect actions) were taken but no violation occurred
4. System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system

**Revised Levels of Non-compliance: None**

**Summary Consideration:**

Based on industry comments and additional review of the Functional Model, this requirement and its associated levels of non-compliance were removed from this standard.

<b>No – Comments indicating requirement is inappropriate</b>	
Toni Timberman BPA #1	No TOP does not have this responsibility
This requirement and its associated levels of non-compliance were removed from the standard.	
<b>No – Comments indicating levels 2 and 3 are the same</b>	
FRCC 6-#1, 4-#2, 1-#2	No Similar to our comments on question 33, not sure what the difference in level 2 and 3 are. Anyway, since we think the requirement itself needs to be changed, the noncompliance levels would need to be based on the revised requirement.
This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first posting of this standard and there was no difference between levels 2 and 3.	
OLDTF (9?) 6 - #2 1 - #1,5 Sam Jones ERCOT #2	See response to Q 33. 2 and 3 appear to be the same. { Level 2 and 3 appear to be the same.}
This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first posting of this standard and there was no difference between levels 2 and 3.	
Thomas Pruitt Duke #1	No What is the difference between levels 2 and 3?
This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first posting of this standard and there was no difference between levels 2 and 3.	

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Kathleen Goodman ISO NE #2	No Levels two and three appear to be identical.
<p>This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first posting of this standard and there was no difference between levels 2 and 3.</p>	
John Blazekovich Exelon #1,3,5,6	No Do not understand the difference between items 2 & 3 – clarification is needed.
<p>This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first posting of this standard and there was no difference between levels 2 and 3.</p>	
Alan Boesch NPPD #1	No What is the difference between two and three? If it is the difference between documenting and reporting a violation (the amount of time over the limit), this needs to be clarified in the standard. The items in No. 4 need to be expanded based on comments to question No. 10.
<p>This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first posting of this standard and there was no difference between levels 2 and 3.</p>	
George Bartlett Entergy Svcs 1	No Comments to Requirement 12 apply here also. <i>{ In general, this requirement is somewhat subjective and difficult to quantify. Operators will become unnecessarily conservative in order to meet this requirement. Also, levels 2 and 3 of non-compliance must be revised, they are exactly the same. Level 2 should read something like – “Monitoring and/or reliability analyses identify a potential problem – no actions, or incorrect actions, were taken but no limit violation “. Level 3 should read something like – “Monitoring and/or reliability analyses identified a problem, actions were taken but were not sufficient to mitigate the problem, but no instability, uncontrolled separation or cascading outages occurred. Level 4 seems OK.}</i>
<p>This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first posting of this standard and there was no difference between levels 2 and 3.</p>	
<p><b>No – Comments indicating levels of non-compliance are inappropriate</b></p>	
Tom Petrich (5) PG&E #1	No Non-compliance Levels 2 and 3 do not seem reasonable. For example, during emergencies, the correct action may be “no action”. In any case, If no limit violation occurred, what is the basis of the “non-compliance”. They should be changed to “not applicable”.
<p>This requirement and its associated levels of non-compliance were removed from the standard. The revised requirement for the RA clearly indicates that taking ‘no overt action’ may be an acceptable action.</p>	
Todd Lucas (6?) Southern Co #1	No Need to clarify the difference between “limit violations” and “violations”. Non compliance should be structured around OSLVs.



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	<p>Clarification is needed for “no action”. There may be cases where taking no action is the appropriate response</p> <p>How will compliance be monitored for cases where no violations occur?</p> <p>Consideration should be given to combining requirements 13 &amp; 15.</p>
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p> <p>The revised standard distinguishes between violations that must be documented and those that must be both documented and reported. Only violations that exceed their T<sup>v</sup> must be reported to the compliance monitor.</p> <p>The revised requirement for the RA clearly indicates that taking ‘no overt action’ may be an acceptable action.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Same response as provided for Question 33.</p> <p><i>{Should entities be penalized for things that might have happened but didn't? How much faith do we place in analysis results? If an overload would have been 1% over rating and nothing happened, is that a problem. 5%? 10%? If something happens, some type of penalty/written reprimand should be issued with a lesson learned follow-up to make sure it does not happen again. Hopefully a system isn't created that discourages people from reporting problems to avoid fines and thereby miss the opportunity to analyze a problem to prevent it in the future.</i></p> <p><i>Level 3 non-compliance doesn't appear to be different from level #2.</i></p> <p><i>Level 4 non-compliance should forgive extraordinary and severe causes as follows: System operating limit violated and resulted in instability, uncontrolled separation or cascading outages that adversely impacted the reliability of the bulk transmission system without the influence of severe storms, sabotage, or other extraordinary conditions.}</i></p>
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>Level 2 states “no actions or incorrect actions were taken . . .” The determination that the actions were incorrect would be by after the fact analysis performed by whom? Additionally, would it be necessary to determine whether the actions taken were due to gross negligence or due to an “honest” error or misinterpretation of the data or misinterpretation of the directive given by the RA? Would non-compliance sanctions differ based upon gross negligence vs. honest error?</p> <p>We are not sure what the difference between Level 2 and Level 3 is. Please clarify.</p> <p>Some “what ifs”: What if the system operating limit (SOL) was violated and thus the bulk transmission system was at risk but actual instability, uncontrolled separation, or cascading outages did not occur? What level of non-compliance should this be?</p> <p>What if the SOL was violated, and the RA had directed the TOP to take action but the TOP did not take the action? As stated above, this is either a level 2 or level 3 non-compliance. But, what if the RA directed the TOP and the BA to take action and the TOP took the action but the BA did not? The TOP is compliant and the BA should be found non-compliant. But, per the above, the TOP is non-compliant too because the SOL was violated.</p> <p>What if the SOL is violated, and the RA has directed the TOP and/or BA to take action, and they are in the midst of taking that action, but prior to the action being fully implemented, instability, uncontrolled separation or cascading outages</p>

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	<p>occur? Is anyone non-compliant and if so at what level?</p> <p>What if monitoring and/or reliability analysis identified a problem, and the RA directs the TOP to take specific action, but the TOP does not take the action? Does it matter whether the SOL was violated or not?</p>
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p>	
<p>Joseph Buch Madison #4</p>	<p>No</p> <p>See comments on question 33.</p> <p><i>{ Level 4 as presently defined indicates that instability, uncontrolled separation or cascading outages have already occurred. This might be akin to locking the barn after the horse is out. We should be a level 4 if the potential exists, not after it happened.}</i></p>
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p>	
<p>Ray Morella Joanne Borrell Ed Stein FirstEnergy #1, 3, 6</p>	<p>No</p> <p>I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don't think that the Transmission Operator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action.</p>
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>No</p> <p>I agree with Non-compliance levels 1, 2, and 3. Non-compliance level 4 is where I have a problem. I don't think that the Transmission Operator should be charged with a level 4 non-compliance when he took the action necessary to prevent the problem but some other entity did not take the necessary required action. For instance, if the Transmission Operator ordered a Balancing Authority to drop load because of low or declining frequency and the Balancing Authority did not drop the load, then the level 4 non-compliance should be charged to the Balancing Authority not the Transmission Operator.</p>
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p> <p>Under the Functional Model, the TOP will not direct the BA to take action – directing the BA to take action is the responsibility of the RA.</p> <p>Although this requirement has been removed from this standard, it is important to note that the compliance section of each standard must relate to the same function(s) that are assigned the requirement and measures. If a standard assigns a requirement and its measures to one function, such as the RA, then the sanctions for non-compliance with the requirement and its measures must also be assigned to the RA.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>No</p> <p>See comment for #33.</p> <p><i>{ The issue should not be one of violation not occurring because the contingencies considered didn't happen. The issue should be one of risk and recognition of the impacts of the contingencies such that operation must be to limits based on these contingencies.}</i></p>
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p>	
<p>No – Comments indicating addressing non-compliance is premature</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No</p> <p>It is premature to develop compliance levels at this time.</p>
<p>It is important that entities responsible for compliance understand the ramifications of compliance as well as the standard itself. The standard, therefore, will contain compliance requirements along with the standard itself. This principle is inherent in the development of all new standards.</p>	

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Susan Morris SERC #2 Robert Reed TS (See List)	No Question 34 needs to be addressed and resolved before the levels of non-compliance can be determined.
This requirement and its associated levels of non-compliance were removed from the standard.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5  David Kiguel Hydro One #1	No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.  Further clarification is requested regarding the difference between violation and limit violation.
This requirement and its associated levels of non-compliance were removed from the standard. The revised standard uses a distinction between violations that must be documented and those that must be both documented and reported to the compliance monitor. Any instance of exceeding an IROL must be documented– any instance of exceeding an IROL for time greater than T <sub>v</sub> must be both documented and reported.	
Ed Riley CA ISO #2	No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.
It is important that entities responsible for compliance understand the ramifications of compliance as well as the standard itself. The standard, therefore, will contain compliance requirements along with the standard itself. This principle is inherent in the development of all new standards	
Albert M. DiCaprio MAAC #2 Fred Frederick Vectren #3 Vern Colbert Dominion #1 Richard Kafka Pepco #1	No
Yes – Comments indicating additional clarification is needed	
Lloyd Linke MAPP #2	Yes “Problem” is too vague. Also, this should not be tied solely to instability, uncontrolled separation, or cascading... other operating limits also need to be consistently adhered to.  System Operating Limit should be in caps to be consistent with the definition on page 2.
This requirement and its associated levels of non-compliance were removed from the standard. In the revised requirement for the RA, the word ‘problem’ is not used. Instead, additional language was added to clarify that the problem is exceeding an IROL. The format adopted for new reliability standards does limits capitalization to proper nouns.	
Yes – Comments indicating Levels 2 and 3 are the same	
Francis Halpin BPA Bus Line #5,6	Yes But..is there really a substantive difference between level 2 and level 3? Should three read “..no reportable violation occurred”????
This requirement and its associated levels of non-compliance were removed from the standard. There was a typographical error in the first draft of the standard that made levels 2 and 3 identical.	
Darrel Richardson	Yes

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Illinois Power #1, 3	We agree with the levels, however we are curious as to the difference between Level 2 and Level 3. If these mean the same, then one should be eliminated. Perhaps there should be a definition of both a “limit violation” and “violation”.
<p>This requirement and its associated levels of non-compliance were removed from the standard.  There was a typographical error in the first draft of the standard that made levels 2 and 3 identical.</p>	
Kim Warren IMO #2	Yes A more descriptive or clearer definition is required to differentiate between level 2 and level 3.
<p>This requirement and its associated levels of non-compliance were removed from the standard.  There was a typographical error in the first draft of the standard that made levels 2 and 3 identical.</p>	
Tony Jankowski We-Energies #4	Yes #2 should state that a system operating limit was exceeded, but no violation. #3 should state that a system operating limit violation occurred.
<p>This requirement and its associated levels of non-compliance were removed from the standard.</p>	
Bob Burkard NCMPA1 # 3,4,5 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 James Stanton Calpine #5 Joe Minkstein PG&E #5 Karl Kohlrus CWL&P #5 Lee Xanthakos SCE&G #1 Mike Miller Southern Co #1 Roman Carter So Co Gen 3,5,6 (6 members) Stuart Goza TVA #1 William Smith Allegheny Pwr #1	Yes

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**36. Requirement 14 – Do you agree with this requirement and its associated performance/outcome and measure/s?**

**Original Requirement**

The Reliability Authority (RA) shall have a mitigation plan that includes actions to take to prevent and mitigate exceeding system operating limits.

**Measure(s)**

Mitigation plan/procedure(s) that identify actions the RA shall take to remain/return to a state that is within system operating limits.

**Outcome(s)**

The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**Revised Requirement**

The reliability authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its interconnection reliability operating limits.

**Measure(s)**

The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall be coordinated with those entities responsible for acting and with those impacted by such actions.

- The action plan may be a process or procedure for preventing or mitigating instances of exceeding interconnected reliability operating limit violations. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to prevent and mitigate exceeding interconnected reliability operating limits.)

**Summary Consideration:**

Several commenters objected to use of the term, 'mitigation plan' and it was replaced with the term, 'action plan'. Additional language was added to clarify that the plan must address both preventing and mitigating instances of exceeding IROLs. The requirement was revised to clearly indicate that the RA may act or direct others to act.

Additional language was added to clarify that this requirement is only addressing the subset of system operating limits called, 'interconnection reliability operating limits'. The requirement that the plan be 'approved' was dropped because it was misleading. (The original intention was that the plan be formally signed by someone who worked for the RA. Use of the term, 'approved' led to several different conclusions and distracted from the intent of this requirement.) Additional language was added to confirm that existing processes or procedures may be considered action plans for this requirement.

Additional language was added to indicate that the action plan must be coordinated with the entities that either have to take actions as part of this plan or will be impacted by the plan.

The Outcomes section was removed from all standards.

<b>No – Comments indicating requirement needs clarification</b>	
FRCC	No

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6-#1, 4-#2, 1-#2	Mitigation plans of the TOP, BA etc. need to be understood and reviewed by the RA so that when limits are exceeded, the RA can direct actions that will return the system to a normal or safe operating state. The outcome statement says that the RA will have a documented, approved mitigation plan. Who is this mitigation plan to be approved by? This requirement is not very clear.
<p>The requirement has been modified to more clearly indicate that the RA must have an action plan that addresses both preventing and mitigating instances of exceeding IROLs.</p> <p>The requirement has been modified to remove the 'approval' element and to add a requirement that the action plan be coordinated with those who would be involved in the plans implementation.</p>	
Todd Lucas (6?) Southern Co #1	No Need clarification of the responsibilities. Mitigation plans are the joint responsibility of the RA, TOP, & TO and should be jointly developed
<p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would either be required to act as part of the plan, and with those who would be affected by the plan.</p>	
Sam Jones ERCOT #2OLDTF (9?) 6 - #2 1 - #1,5	No Re Outcomes: We believe that this should read "procedure or policy" to ensure "Operating within limits and associated mitigating actions are taken." We don't know how you can have a "documented, approved mitigation plan" for unknown contingencies. Furthermore, Requirement 14 is awkward – such a plan should be part of the Certification requirements, not this standard.
<p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would be required to act as part of the plan, and with those who would be affected by the plan, and to indicate that existing procedures may be used as an action plan.</p> <p>The Outcomes section has been absorbed into the measures.</p> <p>While the Certification Requirements look for certain plans and procedures to be in place, when an entity is certified to perform the RA function, that entity may not have had all the data needed to identify its IROLs.</p>	
Susan Morris SERC #2 Robert Reed TS (See List)	No The requirement can be enhanced. See the following comments as examples: <ul style="list-style-type: none"> <li>- It should be clarified that these plans need to include system intact and applicable prior-outage conditions.</li> <li>- It is only necessary to have a procedure in place that relieves the SOL violation. If a mitigation plan requires external approvals, then by whom? Will security constrained generation redispatch be an acceptable prevention or mitigation action?</li> </ul>
<p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would either be required to act as part of the plan, and with those who would be affected by the plan, and to indicate that existing procedures may be used as an action plan.</p> <p>The requirement was further refined to indicate that the purpose of the plan is to prevent and mitigate instances of exceeding IROLs.</p> <p>The use of a security constrained generation redispatch program may be part of an action plan, but would not, by itself, meet this requirement</p>	
Alan Johnson Mirant #6	No Agree in concept, but unclear as to who approves the mitigation plan and on what basis. Does it fall upon NERC to make these determinations?

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<p>The requirement here is that the RA have a plan. The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would either be required to act as part of the plan, and with those who would be affected by the plan, and to indicate that existing procedures may be used as an action plan.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>We agree with the intent of this requirement. However, the language of the requirement needs to be modified. First, the wording in Version A and Version B are different. Which is correct? Version B explicitly states the plan must be approved in the requirement section, whereas version A only mentions the plan needing to be approved in the levels of non-compliance section. If the mitigation plan is to be approved, then by whom? We would hope by the Regions. Second, is it intended that this Plan replace the Region and/or RA Reliability Plans? Is this Plan just a section of those Plans? If so, isn't this part of the organizational requirement of the RA and thus covered elsewhere?</p> <p>Third, how detailed do you want these plans? Are they just to state the congestion management procedures available to the RA, such as redispatch (LMP) and NERC TLR procedures? The requirement seems too vague as worded. Based upon what is expected to be included in reliability analysis under previous requirements in this document, it seems unreasonable to expect that all problems can have a one size fits all scenarios solution (mitigation plan). It does seem reasonable that the RA have a plan that states their congestion management practices and tools available. But that should be a requirement of a RA.</p> <p>Define "mitigation plan".</p>
<p>Version A/Version B distinction will disappear in the next draft. This standard will not assign requirements to regions. Responsibility for the plan rests with the RA.</p> <p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would either be required to act as part of the plan, and with those who would be affected by the plan, and to indicate that existing procedures may be used as an action plan. Additional language was added to clarify that the action plan must address what actions the RA will take or direct others to take to prevent and mitigate instances of exceeding its interconnection reliability operating limits.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>It is unreasonable to expect there will be a documented mitigation plan for everything. A storm or other cause of combined events can result in unanticipated or extremely rare outage scenarios. Lack of documentation for such scenarios need not be a hindrance since an experienced operator can promptly devise an effective mitigation plan. However, producing and maintaining documentation for all such scenarios would be burdensome and inefficient.</p> <p>Will it be possible to keep a mitigation plan matrix up to date and get necessary approvals in a timely fashion?</p> <p>Who will approve the mitigation plan?</p>
<p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would either be required to act as part of the plan, and with those who would be affected by the plan, and to indicate that existing procedures may be used as an action plan. The action plan must address what actions the RA will take or direct others to take to prevent and mitigate instances of exceeding its IROLs. It is not the intention that the action plan address every possible scenario.</p>	

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<p>Gregory Campoli NY ISO #2</p>	<p>No We are unclear as to who should be approving a mitigation plan. Procedures should be identified that include mitigation plans. The requirement should be changed to reference procedures not mitigation plans.</p>
<p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were revised to indicate that existing processes or procedures can be used as an action plan for this requirement.</p>	
<p>James Stanton Calpine #5</p>	<p>No The Requirement sentence seems to be poorly constructed. Suggest this alternative: "The Reliability Authority (RA) shall have a mitigation plan that includes procedures designed to prevent operating limits from being exceeded, and to mitigate the effects of periods when the limits are exceeded."</p>
<p>The requirement was modified in a way that supports this suggestion.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No We agree with this Requirement, in general. However, the plan should not have to be "approved" by anyone other than through internal RA processes.</p>
<p>The term, 'approve' has been removed from this requirement. That is what was originally intended, but was not clearly stated.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No Same comment as for Requirement #12, question #32. <i>{ The RA must not act when there are market mechanisms available to mitigate/prevent the identified problem. This Standard must recognize that such congestion management processes will be accommodated by the RAs before RAs take actions. The Standard must coordinate with the business practice or standard that will be employed to relieve congestion or anticipated system problems.}</i></p>
<p>The RA has the ultimate responsibility for resolving an identified problem by whatever means it has at its disposal. The RA will undoubtedly employ market mechanisms to uphold this responsibility but this standard will not require it to do so. Its business practices must conform to the standard.</p>	
<p><b>No – Comments indicating requirement is inappropriate</b></p>	
<p>Lee Xanthakos SCE&amp;G #1</p>	<p>No See comments for questions 32. State laws may prohibit RAs from taking action on a TOPs system <i>{ We do not agree with this requirement. Furthermore we do not agree that NERC has the authority to force such a requirement onto the RAs. As written, the requirement essentially bestows functional control to the RA. This is something the South Carolina PSC has expressly ruled is the responsibility of the TSP and no one else. Actual and functional control of the transmission system is the responsibility of SCE&amp;G's transmission department. This responsibility can not and will not be transferred to any other entity without expressed approval of the Public Service Commission. This approval has not been given nor is it expected to be given, regardless of SCE&amp;G's desires We recommend that drafting team should instead write a standard that requires the RA to notify the TSP of a imminent situation and provide assistance, if requested, so the TSP can implement their own mitigation plans.}</i></p>
<p>These new reliability standards are being drafted in support of the Functional Model. Under the Functional Model, the reliability authority has responsibility for protecting the reliability of the transmission system – and the transmission operator has responsibility for protecting the reliability of local networks. It sounds like SCE&amp;G may serve as both an RA and a TSP – this is totally acceptable under the</p>	



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Functional Model. If this is true, there is no conflict with the requirements imposed by the South Carolina PSC.	
Compliance Managers	Delete this requirement See Comments under Requirement #12 <i>{ There are two parts to the Requirement. The first is a requirement to use the monitoring and analysis information to prevent an OSL. If this is done, there are no further requirements since there are no violations. The second part of the proposed requirement is to determine how well the entity rectified (mitigated) the situation after a violation occurred. This will be part of the report and possible investigation after a violation occurs, and therefore will be part of the process of Requirement #1. }</i>
Requirement 1 in the first draft of this standard did not address either having a mitigation plan or reporting instances of exceeding limits. When an operational planning analysis is conducted, it may identify a limit that may be exceeded in the future – when a real-time assessment is conducted it may identify a limit that has already been exceeded. This standard requires both.	
Joseph Buch Madison #4	No
Fred Frederick Vectren #3	No
<b>Yes – Comments indicating additional clarification needed</b>	
Toni Timberman BPA #1	Yes/No Requirement does not specify “documented, approved” mitigation plan but the Outcome and Levels of Non-Compliance use this language. Who is responsible for approving the plan?
The term, ‘mitigation plan,’ has been replaced with the term, ‘action plan’ – and the word, ‘approve’ has been removed from this requirement. Additional revisions shifted the emphasis from ‘approval’ to ‘coordination’ with involved entities.	
William Smith Allegheny Pwr #1	Yes Requirement 214 and 215 are very similar. Requirement 214 applies to Reliability Authorities and requirement 215 applies to Transmission Operators. Coordination among the two entities should be required.
The duplicate requirement for the TOP has been removed from this standard. This requirement was modified to shift the emphasis from ‘approval’ of the plan to ‘coordination’ with involved entities.	
Vern Colbert Dominion #1	Yes Contingency plan is a better choice of wording for this requirement than mitigation plan.
The term, ‘mitigation plan’ has been replaced with ‘action plan’. Because the plan addresses situations where limits may be exceeded as well as situations where limits have been exceeded, ‘action plan’ seemed more appropriate than contingency plan.	
Tony Jankowski We-Energies #4	Yes Should read: To prevent or mitigate system operating limit violations.
The requirement has been revised to add this clarification.	
Tom Petrich (5) PG&E #1	Yes In the sentence, “The RA shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits.” We may want to replace the word “approved” with “finalized”. If not, we suggest identifying the approving party. Otherwise, it could introduce confusion in implementation.

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<p>Agree with the intent of this revision. The term, 'approved' has been removed from this requirement.</p>	
<p>Thomas Pruitt Duke #1</p>	<p>Yes  (6 The use of the word "approved" needs to be clarified. Who approves the plan?  2) Since System Operating Limits are still being developed, it is premature to use this term in the requirement. The requirement should be worded in such a way that does not use the term.</p>
<p>This requirement was modified to shift the emphasis from 'approval' of the plan to 'coordination' with involved entities.  The SDT has been working with the Facilities Rating SDT to utilize the terminology being developed by that team. With the revisions to this standard, a new term, "Interconnection Reliability Operating Limit or IROL" is being introduced. IROLs are the subset of all system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. If endorsed by the industry, the term, IROL will be used in this standard.</p>	
<p>Lee Westbrook Oncor #1</p>	<p>Yes  Emergency operations plans may not be documented to the same degree as plans prepared pre-contingency.</p>
<p>This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes  Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.</p>
<p>This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
<p>Richard Schwarz PNSC #2</p>	<p>Yes  The requirement does not require an approved mitigation plan. Who is responsible for approving the mitigation plan?</p>
<p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. Additional revisions shifted the emphasis from 'approval' to 'coordination' with involved entities.</p>	
<p>Mike Miller Southern Co #1</p>	<p>Yes  Documentation included for Non-reportable as well as Reportable OSLV required</p>
<p>One of the other requirements in this standard has been revised to clarify that documentation is required for recordable events as well as IROL violations.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes  It should be clarified that these plans need to include system intact and applicable prior-outage conditions.  System Operating Limit should be in caps to be consistent with the definition on page 2. The requirement section language should be the same as that for requirement #15.</p>
<p>This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to prevent and mitigate instances of exceeding IROLs.  The format for Reliability Standards limits capitalization to proper nouns.</p>	
<p>John Blazekovich</p>	<p>Yes</p>

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<p>Exelon #1,3,5,6</p>	<p>What entity is required to “approve” the mitigation plan?                  Need to clearly state the scope of the plan required along with the level of detail required in the plan.                  The outcome appears to require entities to prepare plans to address instability and uncontrolled separation only, this requirement should address “Planned for Contingencies”.</p>
<p>The term, ‘mitigation plan,’ has been replaced with the term, ‘action plan’ – and the word, ‘approve’ has been removed from this requirement. Additional revisions shifted the emphasis from ‘approval’ to ‘coordination’ with involved entities.                  This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
<p>Ed Stein Firstenergy Sol #6                  Ray Morella FirstEnergy #1                  Joanne Borrell FirstEnergy Sol #3                  ECAR Ops Panel                  #1 – 8 #5 – 1 #2 – 2</p>	<p>Yes                  Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.</p>
<p>The standard was revised to eliminate all of the duplicate requirements for the TOP.                  This requirement is the responsibility of the RA. The requirement was changed to add language that requires that the plan be coordinated with all entities that will have to take actions as part of the plan, and all entities that will be impacted by actions taken as part of the plan.</p>	
<p>Guy Zito (See List)                  NPCC #2 – 2                  NPCC #1 – 5                  David Kiguel                  Hydro One #1</p>	<p>Yes                  It is only necessary to have a procedure in place that relieves the SOL violation. It is unclear if a mitigation plan requires external approvals and by whom.</p>
<p>The term, ‘mitigation plan,’ has been replaced with the term, ‘action plan’ – and the word, ‘approve’ has been removed from this requirement.                  This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to prevent and mitigate instances of exceeding its interconnection reliability operating limits.</p>	
<p>Alan Boesch                  NPPD #1</p>	<p>Yes/No                  Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.</p>
<p>The term, ‘mitigation plan,’ has been replaced with the term, ‘action plan’ – and the word, ‘approve’ has been removed from this requirement.</p>	
<p>Francis Halpin                  BPA Bus Line #5,6</p>	<p>Yes                  The plan should be the result of a collaborative effort of all involved parties.</p>
<p>The term, ‘mitigation plan,’ has been replaced with the term, ‘action plan’ – and the word, ‘approve’ has been removed from this requirement. Additional revisions shifted the emphasis from ‘approval’ to ‘coordination’ with involved entities.</p>	
<p>Ed Riley                  CA ISO #2</p>	<p>Yes                  If the Requirement and Outcome are modified so that where reference is made to a “mitigation plan”, it says “mitigation plan/procedure”.</p>

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<p>The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. Additional clarifications identified that a process or procedure may be used as a 'plan' if it addresses the actions for the RA to take to or actions the RA will direct others to take, to prevent and mitigate instances of exceeding its interconnection reliability operating limits. The intent was to clarify that if an RA already had a process or procedure in place that addresses IROLs, then that could be used to satisfy this requirement – there shouldn't be a need to develop a new plan if an entity already has something in place.</p>	
<p>Darrel Richardson Illinois Power #1, 3</p>	<p>Yes However, because of varying system usages and configurations the entity should not be in non-compliance if the mitigation plan is not entirely prescriptive. The mitigation plan may point to a range of actions that could be taken to resolve given problems.</p>
<p><u>This is what was intended.</u></p>	
<p>Stuart Goza TVA #1 Roman Carter So Co Gen 3,5,6 (6 members) Roger Green Southern Co #5 Richard Kafka Pepco #1 Joe Minkstein PG&amp;E #5 Gerald Rheault Manitoba #1,3,5,6 Karl Kohlrus CWL&amp;P #5 Kim Warren IMO #2 Doug Hils Cinergy #1 Dilip Mahendra SMUD #1 Bob Burkard NCMPA1 # 3,4,5 Albert M. DiCaprio MAAC #2</p>	<p>Yes</p>

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**37. Requirement 14 – Do you agree with these levels of non-compliance for this requirement?**

<b>Original Levels of Non-compliance</b>
1. Mitigation Plan and/or procedure(s) exists but wasn't approved
2. Not Applicable
3. Not Applicable
4. No mitigation plan or procedure exists

<b>Revised Levels of Non-compliance</b>
1. Action plan exists but wasn't coordinated with all involved and impacted entities
2. Action plan exists but wasn't coordinated with any involved or any impacted entities
3. Not applicable
4. No action plan

**Summary Consideration:**

The levels of non-compliance have been modified to conform with the modifications to the associated requirement.

<b>No – Comments indicating addressing non-compliance is premature</b>	
Ed Riley CA ISO #2	No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Gregory Campoli NY ISO #2	No It is premature to develop compliance levels at this time.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1	No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
FRCC 6-#1, 4-#2, 1-#2	No Until the requirement itself is better understood, we can not comment on these

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	<p>levels.</p> <p>In the draft standard, in the compliance monitoring process section 214(e), there is a sentence that states “The compliance monitor shall evaluate the mitigation plan and/or procedures.” Why is this here? The compliance monitor will evaluate compliance to the requirement measures. It does not seem correct that the compliance monitor will evaluate mitigation plans, as that is not their area of expertise.</p>
<p>The compliance monitor does have the responsibility of measuring compliance with the standard.</p>	
<p>Susan Morris SERC #2 Thomas Pruitt Duke #1 Todd Lucas (6?) Southern Co #1 Robert Reed TS (See List)</p>	<p>No</p> <p>Question 36 needs to be addressed and resolved before the levels of non-compliance can be determined.</p> <p><i>{The requirement can be enhanced. See the following comments as examples:</i></p> <ul style="list-style-type: none"> <li>- <i>It should be clarified that these plans need to include system intact and applicable prior-outage conditions.</i></li> </ul> <p><i>It is only necessary to have a procedure in place that relieves the SOL violation. If a mitigation plan requires external approvals, then by whom? Will security constrained generation redispatch be an acceptable prevention or mitigation action?}</i></p>
<p>The requirement was modified. The requirement has been modified to indicate that the RA is responsible for developing an action plan, rather than a mitigation plan, and that the RA is responsible for coordinating with all involved entities (those that are required to take action and those that are impacted by these actions). The word, approve, has been removed from this requirement, and does not appear in the revised levels of non-compliance. We encourage you to comment on the revised requirement and associated levels of non-compliance.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No</p> <p>Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.</p>
<p>The requirement has been modified to indicate that the RA is responsible for developing an action plan, rather than a mitigation plan, and that the RA is responsible for coordinating with all involved entities (those that are required to take action and those that are impacted by these actions). The word, approve, has been removed from this requirement, and does not appear in the revised levels of non-compliance.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Cannot agree with this approval process since it remains somewhat undefined. For instance, who gives the approval?</p>
<p>The requirement has been modified to indicate that the RA is responsible for developing an action plan, rather than a mitigation plan, and that the RA is responsible for coordinating the development of the action plan with all involved entities (those that are required to take action and those that are impacted by these actions). The word, ‘approve,’ has been removed from this requirement, and does not appear in the revised levels of non-compliance.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.</p>
<p>This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
<p><b>No – Comments indicating levels of non-compliance need adjustment</b></p>	
<p>Toni Timberman BPA #1</p>	<p>#1 is not consistent with the requirement. #4 is ok.</p>

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The levels of non-compliance were revised to conform with the changes made to the associated requirement.	
Tom Petrich (5) PG&E #1	We need to specify the party that would do the approving.
The requirement has been revised to remove the word, 'approve.' The revised requirement emphasizes the need to coordinate development with involved parties, rather than the approval process.	
<b>No – Other comments</b>	
Francis Halpin BPA Bus Line #5,6	No Compliance needs to affirm that a collaborative process took place in the development of the 'mitigation plan'.
The revised requirement and levels of non-compliance address the need to coordinate the development of the action plan with the involved parties.	
Sam Jones ERCOT #2	Please see comments to #36 above. <i>{re: Outcomes. Shouldn't this read "procedure or policy" to ensure "Operating within limits and associated mitigating actions are taken." How can you have a "documented, approved mitigation plan" for unknown contingencies? Furthermore, such a plan as required by Requirement 1`4 should be part of the Certification requirements, not this standard.}</i>
The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would be required to act as part of the plan, and with those who would be affected by the plan, and to indicate that existing procedures may be used as an action plan.  The Outcomes section has been absorbed into the measures.  While the Certification Requirements look for certain plans and procedures to be in place, when an entity is certified to perform the RA function, that entity may not have had all the data needed to identify its IROLs.	
ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2 Ray Morella FirstEnergy #1	No Version A and Version B of this questionnaire have different descriptions of non-compliance for this requirement. The standard needs to define which description is correct.
The next draft of the standard will consist of a single version to eliminate this discrepancy.	
<b>Yes – Comments indicating additional clarification needed</b>	
Lloyd Linke MAPP #2	Yes It should be clarified who needs to approve these plans – corporate manangement, NERC....
The revised requirement does not include the term, 'approved' – instead it emphasizes the need to coordinate the development of an 'action plan' with all entities that would be required to act or would be impacted by actions included in the plan.	
Raj Rana AEP #1,3,5,6	Yes However, you need to define in the requirements section who is to approve the plan and be more specific as to what the approval requirements are. That is just how detailed does this plan need to be. However, if the intent is that each identified credible contingency scenario has its own action plan, that seems unrealistic unless this is at a superficial highlevel and then what is the point of the plan?

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The revised requirement does not include the term, 'approved' – instead it emphasizes the need to coordinate the development of an 'action plan' with all entities that would be required to act or would be impacted by actions included in the plan.

This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.

<p>Albert M. DiCaprio MAAC #2          Bob Burkard NCMPA1 # 3,4,5          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          Doug Hils Cinergy #1          Ed Stein Firstenergy Sol #6          Fred Frederick Vectren #3          George Bartlett Entergy Svcs 1          Gerald Rheault Manitoba #1,3,5,6          James Stanton Calpine #5          Joanne Borrell FirstEnergy Sol #3          Joe Minkstein PG&amp;E #5          John Blazekovich Exelon #1,3,5,6          Joseph Buch Madison #4          Karl Kohlrus CWL&amp;P #5          Kim Warren IMO #2          Mike Miller Southern Co #1          Richard Kafka Pepco #1          Richard Schwarz PNSC #2          Roman Carter So Co Gen 3,5,6 (6 members)          Stuart Goza TVA #1          Tony Jankowski We-Energies #4          Vern Colbert Dominion #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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### 38. Requirement 15 – Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Requirement

The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.

#### Measure(s)

Mitigation plan/procedure(s) that identify actions the TOP shall take to remain/return to a state that is within system operating limits.

#### Outcome(s)

The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to take to prevent exceeding identified system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.)

**Revised Requirement:** None

#### Summary Consideration:

Based on the comments submitted and a review of the Functional Model, the SDT removed this requirement from this standard.

Under the Functional Model, this requirement is assigned solely to the RA. The TOP is responsible for local network integrity, not the integrity of the interconnected bulk electric system. The TOP works under the direction of the RA.. Here is a subset of what is included for the TOP in the Functional Model:

- Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations
- Operates transmission system facilities under direction of the Reliability Authority
- Requests Reliability Authority to mitigate Operating Reliability Limit violations. (e.g., re-dispatch, transmission loading relief)
- Implements reliability measures as directed by Reliability Authority

#### No – Comments indicating requirement is inappropriate

Toni Timberman BPA #1	Requirement does not state that the documented plan must be approved. Requirement states that actions “prevent exceeding” but the outcome says “remain/return to within”. These are not consistent. Again, TOP has no responsibility for the bulk transmission system.
This requirement was dropped from this standard.	
Richard Kafka Pepco #1	No This is an RA responsibility
This requirement was dropped from this standard.	
Albert M. DiCaprio MAAC #2	No Again, this is an RA responsibility.
This requirement was dropped from this standard.	
No – Comments indicating additional clarification is needed	

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<p>Thomas Pruitt Duke #1</p>	<p>No See comments for question 36. <i>{1) The use of the word “approved” needs to be clarified. Who approves the plan? 2) Since System Operating Limits are still being developed, it is premature to use this term in the requirement. The requirement should be worded in such a way that does not use the term.}</i></p>
<p>This requirement was dropped from this standard. The revised requirement for the RA was modified so the word, 'approved' is not used. The SDT has been working with the Facility Rating SDT to utilize the terminology being developed by that team. With the revisions to this standard, a new term, “Interconnection Reliability Operating Limit or IROL” is being introduced. IROLs are the subset of all system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. If endorsed by the industry, the term, IROL will be used in this standard.</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>No (6 Clarification is necessary to specify that these plans need to include system intact and applicable prior-outage conditions. (6 System Operating Limit should be in capital letters to be consistent with the definition on page 2. 3) There may be potential conflict between the RA and TOP in prevention/mitigation actions. Is this requirement necessary?</p>
<p>This requirement was dropped from this standard so there will be conflict between the RA and the TOP. This same requirement for the RA will not address plan requirements in great detail. The RA’s action plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits. The new format for reliability standards limits capitalization to proper nouns.</p>	
<p>Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>Please see comments to #36 above. <i>{re: Outcomes. Shouldn’t this read “procedure or policy” to ensure “Operating within limits and associated mitigating actions are taken.” How can you have a “documented, approved mitigation plan” for unknown contingencies? Furthermore, such a plan as required by Requirement 1`4 should be part of the Certification requirements, not this standard.}</i></p>
<p>This requirement was dropped from this standard. The same requirement for the RA was modified as follows: The term, 'mitigation plan,' has been replaced with the term, 'action plan' – and the word, 'approve' has been removed from this requirement. The measures were modified to indicate that the action plan must be coordinated with those who would be required to act as part of the plan, and with those who would be affected by the plan, and to indicate that existing procedures may be used as an action plan. The Outcomes section has been absorbed into the measures. While the Certification Requirements look for certain plans and procedures to be in place, when an entity is certified to perform the RA function, that entity may not have had all the data needed to identify its IROLs.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No The development of mitigation plans and strategies should be a joint effort between the RA and TOP. But the responsibility should reside with the RA. If both are responsible for developing and having plans, what is to prevent them from having vastly different plans for the same problem? Who determines which plan is implemented?</p>

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	Should the concern be limited to thermal overloads and/or voltage conditions that only lead to catastrophic events?
<p>This requirement was dropped from this standard. The responsibility for developing an action plan rests with the RA. Under the revised RA's requirement, the RA must coordinate the development of its action plan with those entities that would have to take action as part of the plan and with those entities that would be impacted by the actions taken as part of the plan.</p> <p>This standard's scope is limited to the subset of system operating limits called, 'interconnection reliability operating limits' or IROLs. This is the subset of system operating limits that, if exceeded can cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p>	
Charles Yeung Reliant Energy #6	<p>No</p> <p>Same comment as Requirement #13, question #34.</p> <p><i>{ It is unclear what the relationship and responsibilities of the TOP are as compared to the RA. The Standard proposes the same language for both functions. What is the reporting relationship and operational hierarchy between the RA and the TOP? Is the TOP analysis more "local" in nature than the RA analysis? What if each one's analysis does not agree? Which analysis will prevail to ensure grid reliability? }</i></p>
<p>This requirement was dropped from this standard. The responsibility for developing an action plan to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits rests with the RA, not the TOP. The TOP is only responsible for local network integrity.</p>	
Gregory Campoli NY ISO #2	<p>No</p> <p>We are unclear as to who should be approving a mitigation plan. Procedures should be identified that includes mitigation plans. The requirement should be changed to reference procedures not mitigation plans.</p>
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to drop the reference to having an 'approved mitigation plan'. Under the revised requirement, the plan is called an action plan and the need for approval was dropped. The revised requirement indicates that a process or procedure that identifies actions to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits may be used as an action plan.</p>	
Peter Burke ATC #1	<p>No</p> <p>Subject to the response given to Question #36, the TOP should be held accountable for maintaining an accurate record of relevant mitigation plans for its area as supplied by the RA.</p>
<p>This requirement was dropped from this standard. The responsibility for developing an action plan to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits rests with the RA, not the TOP. The TOP is only responsible for local network integrity.</p>	
George Bartlett Entergy Svcs 1	<p>No</p> <p>Our comment to Requirement 14 applies here also. It could also be argued that a TOP should share its mitigation plans with its RA.</p> <p><i>{ We agree with this Requirement, in general. However, the plan should not have to be "approved" by anyone other than through internal RA processes. }</i></p>
<p>This requirement was dropped from this standard. The responsibility for developing an action plan to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits rests with the RA, not the TOP.</p> <p>Under the revised requirement for the RA, the action plan must be coordinated with those who will take actions as part of the plan and those who will be impacted by the plan.</p>	
Ken Skroback	No

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AL Elec Coop #4	In outcomes you say that the mitigation plan must be approved. Approved by whom?
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was revised to drop the requirement that the plan be approved. The original intent was to have someone of authority in the RA's entity approve the plan, but this intent wasn't clearly stated and many commenters objected to the need for an approval.</p>	
Kathleen Goodman ISO NE #2	No Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.
<p>This requirement was dropped from this standard.</p> <p>This same requirement for the RA will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
John Blazekovich Exelon #1,3,5,6	No Requires better definition of violating, returning, and reset point for S.O.L. What entity is required to "approve" the mitigation plan? Need to clearly state the scope of the plan required along with the level of detail required in the plan. The outcome appears to require entities to prepare plans to address instability and uncontrolled separation only, this requirement should address "Planned for Contingencies".
<p>A set of definitions will be posted with the revised standard, and includes definitions of IROLs, documentable IROLs and reportable IROLs.</p> <p>This requirement was dropped from this standard.</p> <p>This same requirement for the RA was revised to drop the need to have the plan 'approved.' This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
James Stanton Calpine #5	No See #37 language. <i>{ The Requirement sentence seems to be poorly constructed. Suggest this alternative: "The Reliability Authority (RA) shall have a mitigation plan that includes procedures designed to prevent operating limits from being exceeded, and to mitigate the effects of periods when the limits are exceeded." }</i>
<p>This requirement was dropped from this standard. The suggested language change was adopted, in concept, in the revised requirement that addresses the RA's action plan.</p>	
Alan Johnson Mirant #6	No Again, agree in concept, but unclear as to what process will be used to approve the mitigation plan.
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to drop the requirement that the plan be approved.</p>	
Compliance Managers	Delete this requirement
<p>This requirement was dropped from this standard.</p>	
Fred Frederick Vectren #3	No
<p><b>Yes – Comments indicating additional clarification needed</b></p>	

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<p>Alan Boesch NPPD #1</p>	<p>Yes/No Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.</p>
<p><a href="#">This requirement was dropped from this standard.</a> <a href="#">The same requirement for the RA was modified to drop the requirement that the plan be approved.</a></p>	
<p>David Kiguel Hydro One #1</p>	<p>Yes/No It is only necessary to have a procedure in place that relieves the SOL violation. It is unclear if a mitigation plan requires external approvals and by whom. Please see our comments under item # 44 (Regional and Interconnection Differences). <i>{There are differences in some Areas. For example, in Ontario the IMO is solely responsible to determine operating limits and to direct the operation of the IMO-Controlled Grid within these limits. The Transmission owners/operators operate thir respective systems under the IMO's direction. They only provide the IMO with equipment ratings which the IMO must respect. The transmission operators do not determine operating limits or monitor/report their compliance. The standard should reflect jurisdictional differences in the responsibilities assigned to the RA and TOP in some areas. }</i></p>
<p><a href="#">This requirement was dropped from this standard.</a> <a href="#">The same requirement for the RA has been modified to clarify that the plan needs to identify the actions the RA must take or actions the RA must direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits. The revised requirement for the RA does not require any approvals.</a></p>	
<p>Kim Warren IMO #2</p>	<p>Yes/No Yes ,only if it is recognized that in some jurisdictions, the TOP may be the same entity as the RA but does not necessarily perform all of the roles(eg. Switching,maintenance,outage &amp; construction notification) that the Functional Model defines for the TOP. Where the RA and the TOP are different, there needs to be a clear distinction of which system limits each are accountable for. This document should be reworked to be consistent with the recently issued OLD TF report.</p>
<p><a href="#">This requirement was dropped from this standard.</a> <a href="#">As revised, this standard clearly addresses only the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. These limits, called interconnection reliability operating limits, are under the control of the RA, not the TOP.</a> <a href="#">The work of the OLDTF was considered in the revisions to this standard. While the concepts in the OLDTF report are very similar to the objectives of this standard, there are some significant differences.</a> <a href="#">The SDT is doing its work as part of an open standards development process and will utilize the work of the OLDTF to the extent that its work is available and is submitted in response to public postings of the draft standard. The SDT will not wait for the OLDTF or any other group to complete its work.</a></p>	
<p>Ed Stein Firstenergy Sol #6 Ray Morella FirstEnergy #1 Joanne Borrell FirstEnergy Sol #3 ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p>	<p>Yes Requirements 214 and 215 are very similar. Requirement 214 applies to Reliability Coordinators. Requirement 215 applies to Transmission Operators. The Reliability Coordinator Plan and the Transmission Operator Plan must be coordinated. These plans must clearly state the responsibilities of the Reliability Coordinator and the responsibilities of the Transmission Operator. There must not be any confusion as to who has the responsibility to take specific actions.</p>

**Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard**

<p>This requirement was dropped from this standard. The responsibility for developing an action plan to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits rests with the RA, not the TOP.</p> <p>Under the revised requirement for the RA, the action plan must be coordinated with those who will take actions as part of the plan and those who will be impacted by the plan – and should involve the TOPs.</p>	
<p>William Smith Allegheny Pwr #1</p>	<p>Yes</p> <p>Requirement 214 and 215 are very similar. Requirement 214 applies to Reliability Authorities and requirement 215 applies to Transmission Operators. Coordination among the two entities should be required.</p>
<p>This requirement was dropped from this standard. The responsibility for developing an action plan to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits rests with the RA, not the TOP.</p> <p>Under the revised requirement for the RA, the action plan must be coordinated with those who will take actions as part of the plan and those who will be impacted by the plan – and should involve the TOPs.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes</p> <p>It should be clarified that these plans need to include system intact and applicable prior-outage conditions.</p> <p>System Operating Limit should be in caps to be consistent with the definition on page 2.</p>
<p>This requirement was dropped from this standard.</p> <p>This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p> <p>The format for Reliability Standards limits capitalization to proper nouns.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5</p>	<p>Yes</p> <p>It is only necessary to have a procedure in place that relieves the SOL violation. It is unclear if a mitigation plan requires external approvals and by whom.</p>
<p>This requirement was dropped from this standard.</p> <p>This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes</p> <p>Again, we have the question about the TOP having an approved mitigation plan. Who does the approval? The RA should understand the mitigation plan, and agree that it will correct the problem, but approval may not be the appropriate word.</p> <p>Not only should the TOP have a mitigation plan ready, but they should have a requirement to implement it when directed to by the RA.</p>
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was revised to remove the approval requirement.</p>	
<p>Vern Colbert Dominion #1</p>	<p>Yes</p> <p>Same as #36</p> <p>{ Contingency plan is a better choice of wording for this requirement than mitigation plan. }</p>

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<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to use the term, 'action plan' rather than mitigation plan. Because the plan addresses situations where limits may be exceeded as well as situations where limits have been exceeded, 'action plan' seemed more appropriate than contingency plan.</p>	
<p>Tony Jankowski We-Energies #4</p>	<p>Yes</p> <p>Should read: To prevent or mitigate system operating limit violations.</p>
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to indicate that an action plan must address actions for the RA to take to or actions the RA will direct others to take, to prevent and mitigate instances of exceeding its interconnection reliability operating limits</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>Yes</p> <p>In the sentence, "The TOP shall have a documented, approved mitigation plan that identifies actions to remain/return to within system operating limits." We may want to replace the word "approved" with "finalized". If not, we suggest identifying the approving party. Otherwise, it could introduce confusion in implementation.</p>
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to remove the requirement that the plan be 'approved.'</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes</p> <p>Need clarification of the responsibilities. Mitigation plans are the joint responsibility of the RA, TOP, &amp; TO and should be jointly developed</p>
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to clarify that the plan must be coordinated with all entities that must act as part of the plan and with all entities that would be impacted by the plan.</p>	
<p>Lee Westbrook Oncor #1</p>	<p>Yes</p> <p>Words should match those in Requirement 14.</p>
<p>This requirement was dropped from this standard.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Yes</p> <p>The plan should be the result of a collaborative effort of all involved parties.</p>
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to clarify that the plan must be coordinated with all entities that must act as part of the plan and with all entities that would be impacted by the plan.</p>	
<p>Ed Riley CA ISO #2</p>	<p>Yes</p> <p>See response to question #36.</p> <p><i>{ If the Requirement and Outcome are modified so that where reference is made to a "mitigation plan", it says "mitigation plan/procedure". }</i></p>
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was modified to clarify that a process or procedure may be used as the 'plan' if it addresses the actions the RA must take to or the actions the RA must direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</p>	
<p>Darrel Richardson Illinois Power #1, 3</p>	<p>Yes</p> <p>However, because of varying system usages and configurations the entity should not be in non-comp[liance if the mitigation plan is not entirely perscriptive. The mitigation plan may point to a range of actions that could be taken to resolve given problems.</p>

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<p>This requirement was dropped from this standard.</p> <p>The plan for the RA may identify a range of actions that could be taken to prevent and mitigate instances of exceeding its IROs.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>Yes</p> <p>However, is there a coordinated effort between the RA and TOP to mitigate an OSL? Or, do the RA and TOP perform the mitigation plan completely independent of one another.</p>
<p>This requirement was removed from this standard.</p> <p>The same requirement for the RA clarifies that the RA must coordinate its action plan with the entities that will take actions as part of the plan, and with the entities that would be impacted by the plan. The RA is expected to act or direct the TOP to act to resolve instances of exceeding IROs.</p>	
<p>Bob Burkard NCMPA1 # 3,4,5 Dilip Mahendra SMUD #1 Doug Hils Cinergy #1 Gerald Rheault Manitoba #1,3,5,6 Joe Minkstein PG&amp;E #5 Joseph Buch Madison #4 Karl Kohlrus CWL&amp;P #5 Lee Xanthakos SCE&amp;G #1 Mike Miller Southern Co #1 Roger Green Southern Co #5 Stuart Goza TVA #1</p>	<p>Yes</p>



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**39. Do you agree with these levels of non-compliance?**

<p><b>Original Levels of Non-compliance</b></p> <p>1. Mitigation Plan and/or procedure(s) exists but wan't approved</p> <p>2. Not Applicable</p> <p>3. Not Applicable</p> <p>4. No mitigation plan or procedure exists</p>
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**Revised Levels of Non-compliance: None**

**Summary Consideration:**

Based on industry comments and additional review of the Functional Model, this requirement and its associated levels of non-compliance were removed from this standard.

<b>No – Comments indicating levels of non-compliance inappropriate</b>	
FRCC 6-#1, 4-#2, 1-#2	No Should compliance levels be for having a plan and implementing it when directed. What good is a plan if it is not used?
<a href="#">This requirement and its associated levels of non-compliance have been dropped from this standard.</a>	
Lee Xanthakos SCE&G #1	No There should be some level of compliance for how well an approved plan was followed.
<a href="#">This requirement and its associated levels of non-compliance have been dropped from this standard.</a>	
Kathleen Goodman ISO NE #2	No Please also make provisions for mitigating actions which were not previously identified by a study, but cleared the limit violation.
<a href="#">This requirement and its associated levels of non-compliance have been dropped from this standard.</a>	
<a href="#">This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.</a>	
Toni Timberman BPA #1	#1 is not consistent with the requirement. #4 is ok
<a href="#">This requirement and its associated levels of non-compliance have been dropped from this standard.</a>	
<b>No – Comments indicating addressing non-compliance is premature</b>	
Susan Morris SERC #2 Thomas Pruitt Duke #1 Robert Reed TS (See List)	No Question 38 needs to be addressed and resolved before the levels of non-compliance can be determined.
<a href="#">This requirement and its associated levels of non-compliance have been dropped from this standard.</a>	
Ed Riley	No

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CA ISO #2	The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1	No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
Gregory Campoli NY ISO #2	No It is premature to develop compliance levels at this time.
The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.	
<b>No – Comments indicating additional clarification needed</b>	
Raj Rana AEP #1,3,5,6	No However, you need to define in the requirements section who is to approve the plan and be more specific as to what the approval requirements are. That is just how detailed does this plan need to be. However, if the intent is that each identified credible contingency scenario has its own action plan, that seems unrealistic unless this is at a superficial highlevel and then what is the point of the plan?
This requirement and its associated levels of non-compliance have been dropped from this standard. For the same requirement for the RA, the approval requirement was removed. This standard will not address plan requirements in great detail. The plan only needs to identify the actions for the RA to take to or actions the RA will direct others to take, to remain within, or to return to, a state that does not exceed its interconnection reliability operating limits.	
Peter Burke ATC #1	No Agreement would depend upon addressing the concerns expressed in Questions #37 and #38 above.
This requirement and its associated levels of non-compliance have been dropped from this standard.	
Ken Skroback AL Elec Coop #4	No Level 1: Approved by whom?
This requirement and its associated levels of non-compliance have been dropped from this standard. For the same requirement for the RA, the approval requirement was removed.	
<b>No – Other comments</b>	
ECAR Ops Panel #1 – 8 #5 – 1 #2 - 2	No Version A and Version B of this questionnaire have different descriptions of non-compliance for this requirement. The standard needs to define which description is correct.
This requirement and its associated levels of non-compliance have been dropped from this standard. The next draft of the standard will consist of a single version to eliminate this discrepancy.	

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Albert M. DiCaprio MAAC #2 Richard Kafka Pepco #1 Joanne Borrell FirstEnergy Sol #3 Ed Stein Firstenergy Sol #6	No
<b>Yes – Comments indicating additional clarification needed</b>	
Tom Petrich (5) PG&E #1	We need to specify the party that would do the approving.
This requirement and its associated levels of non-compliance have been dropped from this standard. For the same requirement for the RA, the approval requirement was removed.	
Alan Boesch NPPD #1	Yes/No Who has to approve the plan? The RA, compliance monitor, TOP or someone else? Who approves needs to be identified in the standard.
This requirement and its associated levels of non-compliance have been dropped from this standard. For the same requirement for the RA, the approval requirement was removed.	
Lloyd Linke MAPP #2	Yes It should be clarified who needs to approve these plans - corporate manangement, NERC....
This requirement and its associated levels of non-compliance have been dropped from this standard. For the same requirement for the RA, the approval requirement was removed.	
Ray Morella FirstEnergy #1	Yes Version A and Version B of this questionnaire have different descriptions of non-compliance for this requirement. The standard needs to define which description is correct.
This requirement and its associated levels of non-compliance have been dropped from this standard.The next draft of the standard will consist of a single version to eliminate this discrepancy.	
George Bartlett Entergy Svcs 1	Yes The 2 <sup>nd</sup> level could be that the mitigation plan exists, has been approved by the TOP, but hasn't been shared with its RA.
This requirement and its associated levels of non-compliance have been dropped from this standard.	
Francis Halpin BPA Bus Line #5,6	Yes Compliance needs to affirm that a collaborative process took place in the development of the 'mitigation plan'.
This requirement and its associated levels of non-compliance have been dropped from this standard. The same requirement for the RA was modified to indicate that the plan must be coordinated with the entities that must act as part of the plan and with the entities that will be impacted by the plan.	
Doug Hils Cinergy #1	Yes Use of mitigation plan from past similar system conditions need acceptable, new documentation need not be perpared for each new occurance of a similar condition.
This requirement and its associated levels of non-compliance have been dropped from this standard.	

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<p>Bob Burkard NCMPA1 # 3,4,5          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          Fred Frederick Vectren #3          Gerald Rheault Manitoba #1,3,5,6          Joe Minkstein PG&amp;E #5          John Blazekovich Exelon #1,3,5,6          Joseph Buch Madison #4          Karl Kohlrus CWL&amp;P #5          Kim Warren IMO #2          Mike Miller Southern Co #1          Roman Carter So Co Gen 3,5,6 (6 members)          Stuart Goza TVA #1          Todd Lucas (6?) Southern Co #1          Tony Jankowski We-Energies #4          Vern Colbert Dominion #1          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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### 40. Requirement 16 - Do you agree with this requirement and its associated performance/outcome and measure/s?

#### **Original Requirement**

The Reliability Authority (RA) shall document instances of exceeding identified system operating limits and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.

#### **Measure(s)**

Data exists and is retrievable that documents instances of exceeding identified system operating limits

Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)

Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)

#### **Outcome(s)**

The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceeded for a specified time period. The report shall be filed within 72 hours of the event.

#### **Revised Requirement (combined with requirement for taking actions)**

The reliability authority shall act or direct others to act to:

- Prevent instances where interconnection reliability operating limits may be exceeded
- Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded

The reliability authority shall document instances of exceeding interconnection reliability operating limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding interconnection reliability operating limits for time greater than or equal to  $T_v$ .

#### **Measure(s)**

The reliability authority shall document each instance of exceeding an interconnection reliability operating limit:

- The reliability authority shall document via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)

The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ :

- The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five business days of the initiation of the event. (The report includes the date and time of the event, identification of which interconnection reliability operating limit was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the interconnection reliability operating limit, actions taken or directives issued, and explanation of results of actions or directives.)

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### Summary Consideration:

The DT met with representatives of both the OLDTF and the Facilities Rating Standards DT and agreed to adopt the term Interconnection Reliability Operating Limit (IROL). (This is equivalent to the term, 'IRL' used by the OLDTF, and is a subset of the system operating limits identified in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard.) The requirement was revised to clearly indicate the Standard's requirement 'to complete' a high level report (not a 'complete' report with all the details and Lessons Learned). The requirement's associated measures were subdivided to distinguish between events that must be documented (all instances of exceeding an IROL for any length of time) and events that must be documented and reported (all instances of exceeding an IROL for a time greater than or equal to the IROL's  $T_v$ .)

**In response to comments on the reporting timing requirements, the time for filing a report was changed from 72 hours to 5 business days.**

<p>OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No First, we believe this applies to IRL Compliance Violations only. Also, should split into a Preliminary Report and a "complete" Report. Preliminary Report should be submitted within 72 hours. A longer time is required for the "complete" report; probably a minimum of one month.</p>
<p>This standard applies just to the subset of system operating limits called, 'Interconnection Reliability Operating Limits'. The report in this standard is just a report of the facts that are immediately available – not a complete investigation of the causes of the event. There is another standard that addresses analysis of events, and the 'complete' report referenced in your comments should fall under that standard.</p>	
<p>Sam Jones ERCOT #2</p>	<p>No Please refer to the OLDTF report. This should apply to IRL Compliance Violations only. Also, this should be split into a Preliminary Report and a "complete" Report. The Preliminary Report should be submitted within 72 hours. A longer time is required for the "complete" report; probably a minimum of one month.</p>
<p>This standard applies just to the subset of system operating limits called, 'Interconnection Reliability Operating Limits'. The report in this standard is just a report of the facts that are immediately available – not a complete investigation of the causes of the event. There is another standard that addresses analysis of events, and the 'complete' report referenced in your comments should fall under that standard.</p> <p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period.</p> <p>The concepts supported by the OLDTF are very similar to those already adopted by the SDT, but there are some differences.</p> <ul style="list-style-type: none"> <li>• The OLDTF requires reporting IRLs that have remained for 30 minutes or longer, while this proposed standard requires reporting each instance where an IROL has been exceeded for its unique <math>T_v</math>.</li> <li>• The data required by the OLDTF is more extensive than the data required by this standard.</li> </ul>	
<p>Vern Colbert Dominion #1</p>	<p>No Wait until the OLDTF study is complete.</p>
<p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
<p>Gregory Campoli</p>	<p>No</p>

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NY ISO #2	This requirement needs to be developed following the work of the NERC OLD TF.
<p>The OLDTF submitted their report to the SDT during this draft standard’s public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
<p>Susan Morris SERC #2 Thomas Pruitt Duke #1 Robert Reed TS (See List)</p>	<p>No Delay this requirement until the OLDTF collaborates with the SDT to define "operating limits". These new limit definitions must also go through the standards process before formal implementation.</p>
<p>The OLDTF submitted their report to the SDT during this draft standard’s public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed. The new definitions included in this standard are being posted for comment when the revised standard is posted for comment.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved.</p>
<p>The OLDTF submitted their report to the SDT during this draft standard’s public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 - 2</p>	<p>No (1) The existing NERC template on Operating Security Limits is confusing. This standard is much, much, much more confusing. There are many system operating limits. This standard does not say which system operating limit has to be reported and under what conditions it has to be reported. Do you have to report a system operating limit exceedance that has little impact on bulk power reliability. If so you'll get thousands of irrelevant reports every week for minor system operating limit exceedances. A report should be filed when a Operating Security Limit has been exceeded for 30 minutes per the existing NERC Policy. See the definition of an Operating Security Limit Violation under item 7 of this questionnaire. Requirement 216 has to be much more specific. If one cannot supply the specifics then this standard is not ready for balloting.  (2) Requirements 216 and 217 are very similar. Requirement 216 applies to Reliability Coordinators. Requirement 217 applies to Transmission Operators. The requirements are duplicative. The standard should require the documenting of Operating Security Limit violations by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both documenting the violations if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a</p>

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	<p>Transmission Operator.</p> <p>(3) The standard needs to clarify the difference between a reportable incident and an incident that is not reportable but must be documented.</p>
<p><b>There are many System Operating Limit (using the Facility Ratings Standard’s terminology) but this standard only addresses the subset of System Operating Limits called Interconnection Reliability Operating Limits of IROLs. IROLs are limits that, if exceeded, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system are addressed in this standard.</b></p> <p><b>Under the proposed standard, each IROL may have a unique T<sub>v</sub>. (Under the proposed standard, T<sub>v</sub> is defined by the RA. The SDT recognizes that existing Operating Policy requires reporting instances of exceeding limits by 30 minutes - however the proposed standard includes the possibility of other time limits) Each instance of exceeding an IROL must be documented, and each instance of exceeding an IROL for a time greater than or equal to T<sub>v</sub> must be reported.</b></p> <p>The Functional Model approach (to drafting Standards) requires that the responsibility for a given function be assigned to one default entity. However, the Functional Model does NOT require that the entity that serves as that default entity be the entity that physically implements that function. A real-world TOP, Control Area, or Reliability Coordinator may be delegated the task of reporting.</p> <p>The consensus of the commenters is that this standard should assign the responsibilities of this standard to the RA and not to the TOP. The duplicate TOP requirement was dropped from this standard.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>No</p> <p>We agree with the intent of this requirement but believe modification to the language is required. Version A and B of this requirement differ slightly. Which is correct?</p> <p>The requirement is not clear on whether the RA is to log and report just system operating limit (SOL) violations (i.e. the limit is violated for the time specified in the Facilities Rating SAR) of both violations and instances where the limit is exceed though a violation per the Facilities Rating SAR has not occurred. We believe the RA should complete a report for all SOL violations as defined in the Facilities Rating SAR, but momentary excursions should not have to be reported to the NERC CM.</p> <p>Suggested revision:</p> <p><b>Requirement 16:</b> The Reliability Authority (RA) shall document instances of exceeding identified system operating limits (limits that if exceeded could lead to instability, etc.) and shall document, log and report on instances where a system operating limit has been exceeded for a specified period of time.</p> <p><b>Measure(s):</b></p> <ol style="list-style-type: none"> <li>1. Data exists and is retrievable that documents instances of exceeding identified system operating limits</li> <li>2. Record of violations is in existence for at least three years that identifies violations (instances where a system operating limit has been exceeded for a specified period of time)</li> <li>3. Complete report filed with applicable Compliance Monitor within 72 hours of exceeding a system operating limit for a specified period of time (includes data and time of event, magnitude and duration of violation, actions taken and explanation of results of actions)</li> </ol> <p><b>Outcome(s) (100% Compliance):</b> The RA shall have retrievable information that documents exceeding identified system operating limits. The RA shall have daily operating logs and supporting documentation to show the magnitude and duration of violations (EMS or other source of data). Logs and supporting documentation shall be available for review for at least three years. The RA shall file a complete report (including date and time of event, magnitude and duration of</p>



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	<p>violation, actions taken and explanation of results of actions) with its Compliance Monitor when a defined limit has been exceeded for a specified time period. The report shall be filed within 72 hours of the event.</p>
<p>We apologize for the confusion in the differences between the two versions of the standard. There were many comments indicating that the requirement be changed, and since we asked commenters to use the 'long' version of the standard when completing this form, we defaulted to the long version to make our revisions.</p> <p>The standard was revised to add more clarity to the type of system operating limit being addressed in this standard, and to the distinction between violations that must be documented and violations that must be documented and reported.</p> <p>The Facility Ratings SAR included a definition of system operating limits, but did not develop a term for the subset of system operating limits addressed in this standard.</p> <p>The revised standard addresses just the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. In this standard, they are called, 'interconnection reliability operating limits', or IROLs.</p> <p>IROLs are system operating limits that are calculated according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Each of these IROLs has a time component called <math>T_v</math>. <math>T_v</math> represents the period of time a limit can be exceeded before the risk to the interconnection is too severe. The RA establishes the <math>T_v</math> for each IROL.</p> <p>Instances of exceeding an IROL for any length of time must be documented – and instances of exceeding an IROL for a time greater than or equal to the IROL's <math>T_v</math> must be reported.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>What is meant by "specified period of time" in the statement "The Reliability Authority shall document . . . exceeded for a specified period of time?" Agreement to this requirement will have to wait until meaning of "specified period of time" is specified.</p> <p>In many cases, a complete and final report cannot be produced within 72 hours. This requirement would be feasible if its requirement were for a preliminary report within 72 hours.</p> <p>This requirement may be a heavy burden on the RA staff depending on the detail required in the documentation. Will the compliance monitor take immediate action on a report filed within 72 hours, what will the compliance monitor do with these reports, what is the compelling reason for providing these reports within 72 hours?</p>
<p>Each IROL has consists of both a magnitude component and a duration component (called its <math>T_v</math>). Although today Operating Policy 2 gives system operators a flat 30 minutes to resolve a system operating limit violation, thirty minutes may be too risky a time for resolving some limits – and a longer time may represent an appropriate risk for other limits. One of the intents in the development of new standards is to question the basis for establishing strict performance objectives that may impact markets. The SDT couldn't identify a technical reason for requiring a 30-minute response time to all limits.</p> <p>The DT revised the text to more clearly indicate the Standard's requirement 'to complete' a high level report (not a 'complete' report with all the details and Lessons Learned). The revised standard indicates that the only data being reported is the factual data immediately available at the conclusion of an event. The report addressed in this standard does not ask for an analysis of the event – there is another standard, "Monitor and Analyze Disturbances, Events and Conditions" that is expected to require more detailed analyses of operating events.</p> <p>In response to comments on the reporting timing requirements, the DT revised the time to 5 business days.</p>	
<p>James Stanton Calpine #5</p>	<p>No</p> <p>Suggest changing "instances of exceeding identified system operating limits" to "instances of identified system operating limits being exceeded" Also, in the</p>

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	Measures #1, "Data exists and is retrievable" retrievable by whom? Should be all interested parties.
<p>The revised standard includes the term, interconnection reliability operating limit or IROL – in the revised standard we've used the term so we didn't have to use 'identified'.</p> <p>The references throughout the standard to having data that is retrievable are meant to indicate that when an entity is audited, the data must be made available to show the compliance monitor.</p> <p>There doesn't seem to be a reliability-related reason for having data available to all entities – and some of the data may include commercially sensitive information. If there is a reliability-related reason for sharing this data, please let us know on the next posting of this standard.</p>	
Ed Stein Firstenergy Sol #6	<p>No</p> <p>This is very confusing because this standard does not identify which operating limits have to be reported and what conditions trigger a reporting event. As an example; a construction project requires a reconfiguration of a power plant substation. This reconfiguration creates a situation where the generating units operating at full load may go unstable with a three phase fault outside the substation and a breaker fail to trip condition. Operational planning studies will show that reducing the plant generation to 60% allows the units to remain stable during the fault conditions. Does this become an operating limit? What happens if the transmission operator elects to take the chance and keep the units operating at full load because the system is capacity short, the UN peace keeping negotiating team is in town, and the probability of having a bolted three phase fault with a stuck breaker is very,very low. Has the operator violated an operating limit? Does the operator have to complete a violation document? This standard has to define what is a violation and when does the violation have to be reported and documented.</p>
<p>There are many System Operating Limits that will be identified following the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The revised standard addresses just the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. In this standard, they are called, 'interconnection reliability operating limits', or IROLs.</p> <p>IROLs are system operating limits that are calculated according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Each of these IROLs has a time component called <math>T_v</math>. <math>T_v</math> represents the period of time a limit can be exceeded before the risk to the interconnection is too severe. The RA establishes the <math>T_v</math> for each IROL.</p> <p>Instances of exceeding an IROL for any length of time must be documented – and instances of exceeding an IROL for a time greater than or equal to the IROL's <math>T_v</math> must be reported.</p> <p>The issue raised in the comment is that of unit stability verses interconnection stability. If the unit's stability affects the integrity of the interconnection then that unit's limits are, by definition, an IROL and therefore covered under this Standard. If the only effect of the limit violation is the instability of a single unit, or single plant then that is a system operating limit (but it is not an IROL).</p> <p>Under this Functional Model, the RA has the responsibility for system reliability. The RA is the one who decides what risks are acceptable. A TOP will be obligated under this standard to follow the orders of the RA.</p>	
Ed Riley CA ISO #2	<p>No</p> <p>The Requirement should be amended to add the following on the end: "..and action taken to return the system to normal status".</p> <p>Also, although the CAISO is recommending removal of the compliance portions, it would like to take the opportunity to suggest a more practical and reasonable time frame for the requirement on filing a report in the event of a violation. The CIASO would like to suggest that in place of "72 hours" that the body that establishes the compliance requirements consider changing the requirement to "5 business days".</p>

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<p>The requirement was adopted in concept. In the revised standard, the requirement states that the RA shall complete an IROL Violation Report for all instances of exceeding an IROL for a time greater than <math>T_v</math>. The report requires that the RA provide the actions taken to return the system to normal. The revised measures also support the inclusion of documentation to identify what actions were taken.</p> <p>There were several comments suggesting changes to the 72 hour reporting time and the standard was revised to adopt your suggested 5 business days.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No</p> <p>Cannot agree without knowing the complete definition of "exceeding identified system operating limits" is.</p>
<p>The standard was revised to more clearly identify that its focus is on operating without exceeding any interconnection reliability operating limits (IROLs). IROLs are system operating limits that are calculated according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Each of these IROLs has a time component called <math>T_v</math>. <math>T_v</math> represents the period of time a limit can be exceeded before the risk to the interconnection is too severe. The RA establishes the <math>T_v</math> for each IROL. In the revised standard, instances of exceeding an IROL for any length of time must be documented and instances of exceeding an IROL for a time greater than or equal to <math>T_v</math> must be documented and reported.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>No</p> <p>It is unclear as to how the system operating limits are established and by who. It is also unclear what the specified period of time that the system exceeds the limit is established and by who. These limits and time periods must be known and pre-approved in a process where all parties that may be affected by the violation can comment.</p>
<p>There are many System Operating Limits that will be identified following the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The revised standard addresses just the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. In this standard, they are called, 'interconnection reliability operating limits', or IROLs.</p> <p>IROLs are system operating limits that are calculated according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Each of these IROLs has a time component called <math>T_v</math>. <math>T_v</math> represents the period of time a limit can be exceeded before the risk to the interconnection is too severe. The RA establishes the <math>T_v</math> for each IROL.</p> <p>Although today Operating Policy 2 gives system operators a flat 30 minutes to resolve a system operating limit violation, thirty minutes may be too risky a time for resolving some limits – and a longer time may represent an appropriate risk for other limits. One of the intents in the development of new standards is to question the basis for establishing strict performance objectives that may impact markets. The SDT couldn't identify a technical reason for requiring a 30-minute response time to all limits.</p> <p>The responsibility for establishing system operating limits is defined in the Functional Model.</p>	
<p>Alan Boesch NPPD #1</p>	<p>No</p> <p>What is the "specified period of time"? Will this period be defined in this standard? What is the importance of getting this information to the Compliance Monitor in 72 hours? What will the compliance monitor do with the report? What is the basis for having the data available for three years?</p>

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<p>IROLs are system operating limits that are calculated according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Each of these IROLs has a time component called <math>T_v</math>. <math>T_v</math> represents the period of time a limit can be exceeded before the risk to the interconnection is too severe. The RA establishes the <math>T_v</math> for each IROL.</p> <p>The standard was revised to extend the reporting time to 5 business days.</p> <p>The Compliance Monitor will review the results of the submitted reports and apply non-compliance sanctions as required.</p> <p>The current practice is for the compliance monitor to audit each entity once every three years. The three year data retention period ensures that there will be some data on hand for the compliance monitor to review.</p>	
<p>Tom Petrich (5) PG&amp;E #1</p>	<p>No</p> <p>The 72 hours time requirement to file a complete report may not provide allowance for emergencies.</p>
<p>The standard was revised to extend the reporting time to 5 business days. The data requested in this report is simply factual data that should be immediately available and does not ask for an analysis of the causes of the event.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>No</p> <p>ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC with 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.</p> <p>By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.</p> <p>We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation regardless of the time in which this was cleared.</p>
<p>There are many System Operating Limits that will be identified following the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The revised standard addresses just the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. In this standard, they are called, 'interconnection reliability operating limits', or IROLs. This supports the purpose of this standard, as defined in the scope of the associated SAR.</p> <p>IROLs are system operating limits that are calculated according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Each of these IROLs has a time component called <math>T_v</math>. <math>T_v</math> represents the period of time a limit can be exceeded before the risk to the interconnection is too severe. The RA establishes the <math>T_v</math> for each IROL.</p> <p>Although today Operating Policy 2 gives system operators a flat 30 minutes to resolve a system operating limit violation, thirty minutes may be too risky a time for resolving some limits – and a longer time may represent an appropriate risk for other limits. One of the intents in the development of new standards is to question the basis for establishing strict performance objectives that may impact markets. The SDT couldn't identify a technical reason for requiring a 30-minute response time to all limits.</p> <p>The revised standard clarifies that the data to be archived for instances of exceeding an IROL for a time</p>	

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<p>less than the IROL's <math>T_v</math> may be a system log if that log contains the actions taken or directives issued to resolve the event.</p>	
<p>Compliance Managers</p>	<p>There is no requirement to have a separate Performance Standard for a report. It seems that this would be more appropriately included in the Compliance Program. As example, as part of the Compliance Program, there would be a requirement for the RA to file a report within 72 hours of exceeding a System Operating Limit for greater than 30 minutes.</p> <p>The information required in the report would be included in the compliance program. Similarly, other data which should be included in the Compliance program, but not in the Performance Standard would be:</p> <ul style="list-style-type: none"> <li>• Type of Compliance Assessment required: Periodic Audit, Investigation, Self Assessment etc</li> <li>• Applicable to</li> <li>• Monitoring responsibilities</li> <li>• Compliance assessment notes</li> <li>• Multipliers for penalties</li> <li>• Reset Periods</li> <li>• Data Retention requirements</li> <li>• Occurrence period</li> </ul>
<p>Under the new standards development process, if you want to hold an entity responsible for completing a report, then the report must be addressed in the standard. Several of the items suggested here are already included in each standard, as specified in the Reliability Standards Process Manual.</p>	
<p>Ray Morella Joanne Borrell FirstEnergy #1, 3 Fred Frederick Vectren #3</p>	<p>No</p>
<p>George Bartlett Energy Svcs 1</p>	<p>Yes/No</p> <p>How can an RA prove the negative, that is, how can they prove that a violation of system operating limits did not occur, unless they keep all operational data for some length of time? NERC needs to carefully consider this requirement, as the operational data generated on an hourly basis with a 4 second scan rate is unbelievably voluminous. We would prefer that a short rolling time limit be set for the retention of all EMS data, such as 3 months. There should be some kind of investigation procedure that triggers the analysis of this data on a post-event basis.</p>
<p>The standard has been revised to require significantly less data. Under the revised standard, the RA only needs to compile data that shows the directives issued, the magnitude and duration of exceeding the IROL. In most cases, the data is already collected on the operating log.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes</p> <p>Manitoba Hydro is concerned about the amount of data that may be required to be collected for this requirement. Perhaps there needs to be some sampling process or investigation only when multiple violations occur or when a system disturbance results</p>
<p>The IROLs addressed in this standard are a subset of System Operating Limits. IROLs and there should not be many of them. In the revised standard, there is clarification to indicate that system operating logs may be sufficient documentation to show that actions were taken or directives were issued.</p>	

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Darrel Richardson Illinois Power #1, 3	Yes The requirement of “within 72 hours” seems to be rather quick.
<p>The standard was revised to extend the reporting time to 5 business days. The data requested in this report is simply factual data that should be immediately available and does not ask for an analysis of the causes of the event.</p>	
Roman Carter So Co Gen 3,5,6 (6 members)	Yes Are there current reports available to better identify what the cause was for exceeding the security limit and would this report be available within 72 hours to meet the documentation requirement above. If not, maybe the timeframe should be changed.
<p>The standard was revised to more clearly indicate the requirement is ‘to complete’ a high level report (not produce a ‘complete’ report with all the details and Lessons Learned). There is another standard that addresses analysis of events, and the ‘complete’ report referenced in your comments should fall under that standard.</p> <p>The standard was also revised to extend the reporting time to 5 business days. The data requested in this report is simply factual data that should be immediately available and does not ask for an analysis of the causes of the event.</p>	
Todd Lucas (6?) Southern Co #1	Yes Agree assuming reporting requirements are commensurate with comments for question 6 & 7.
<p>The standard was revised to more clearly indicate the requirement is ‘to complete’ a high level report (not produce a ‘complete’ report with all the details and Lessons Learned). There is another standard that addresses analysis of events, and the ‘complete’ report referenced in your comments should fall under that standard. The standard was also revised to extend the reporting time to 5 business days.</p>	
Tony Jankowski We-Energies #4	Yes Would be good to expand Measure #1 to include an annual summary report that identifies all limit exceedences, duration and number of events.
<p>What is the reliability-related need for an annual report?</p>	
Toni Timberman BPA #1	Yes Requirement should state that “report within 72 hours” on instances... Rather than use “where a system operating limit has been exceeded for a specified period of time” should use “where a reportable violation occurred” and define “reportable violation” elsewhere. In Measure 3, “magnitude” of violation is mentioned for the first time in this standard. I can find no place that includes magnitude as a characteristic of a reportable violation. Suggest moving (EMS or other source of data) to be directly after “supporting documentation” to make it clear that this is what is meant by “supporting documentation”. Duration of violation must be defined...is it just the time of the red-hash mark area of the chart, or is it the yellow area plus the red-hashed area? In measure 3, should “event” be replaced with “reportable violation”?
<p>The revised measure says, ‘An Interconnection Reliability Operating Limit Violation Report completed and filed with its compliance monitor within five business days of the initiation of the event.’</p> <p>In response to the comments about the magnitude of the violation. When this standard was first posted, the Determine Facility Ratings standard hadn’t been drafted and this SDT wasn’t sure if the Determine Facility Ratings Team would define an IROL with a magnitude and time component. Since then, the Facility Ratings team has drafted their standard, and it doesn’t include the definition of an IROL – so we have added it to this standard. Each IROL has a duration component called its Tv. If an IROL is exceeded for a time greater than or equal to the Tv, then the event must be reported to the compliance monitor.</p> <p>Consider the current concept that a control area has 30 minutes to get back under an OSL. In this</p>	

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<p>example the time period (per the SAR chart) is 30 minutes. Prior to the 30 minutes the interconnection is at risk of collapse from a contingency event, but because NERC allows 30 minutes to respond the control area is compliant with NERC standards. The proposed standard's chart shows this 0 to 30 minute period as the Yellow area. The interconnection is at risk but the entity is compliant. An 'event' has occurred but the entity is compliant. After T minutes (in this case 30 minutes) the 'event' becomes a non-compliance matter.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes System Operating Limit should be in caps to be consistent with the definition on page 2. What is the significance of a three year retention requirement? Suggest a one year retention requirement.</p>
<p>The format for Reliability Standards limits capitalization to proper nouns. The three year retention requirement supports the current practice of auditing each entity once every three years.</p>	
<p>Lee Westbrook Oncor #1</p>	<p>Yes Who specifies the "specified period of time"?</p>
<p>The time period is the IROL's T<sub>v</sub> and this is established by the RA.</p>	
<p>Kim Warren IMO #2</p>	<p>Yes Clarify the distinction between "document" and "log". I would think that logging is sufficient.</p>
<p>The standard was revised to clarify that log is a type of document and could be sufficient documentation if it contained all the necessary data.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes However, there are too many "irons in the fire" just now. The NERC OC has a task force working on this particular issue, and as indicated in the March OC meeting highlights, have directed the Reliability Coordinators to "field test" the OLDTF's definition and reporting form. The results of this "field test" need to be considered in this requirement.</p>
<p>The DT is not empowered to suspend the process on its own. If FRCC would like to affect the OC activities, the FRCC should contact the SAC and the standing committees and make such a motion. The field testing of the OLDTF's proposal does not affect this publicly-debated standard. The OLDTF is addressing today's standards and Policies; this Reliability Standard is being processed by an independent public process.</p>	
<p>Alan Johnson Mirant #6 Albert M. DiCaprio MAAC #2 Bob Burkard NCMPA1 # 3,4,5 Dilip Mahendra SMUD #1 Francis Halpin BPA Bus Line #5,6 Joe Minkstein PG&amp;E #5 John Blazekovich Exelon #1,3,5,6 Joseph Buch Madison #4 Karl Kohlrus CWL&amp;P #5 Lee Xanthakos SCE&amp;G #1 Mike Miller Southern Co #1 Richard Kafka Pepco #1 Richard Schwarz PNSC #2 Stuart Goza TVA #1 William Smith Allegheny Pwr #1</p>	<p>Yes</p>

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### 41. Requirement 16 - Do you agree with these levels of non-compliance for this requirement?

#### Original Levels of Non-compliance

1. Report filed on time but incomplete
2. Not Applicable
3. One of the following:
  - Logs were available but supporting documentation was unavailable
  - Supporting documentation indicated unlogged violation
  - An incident occurred and there was no report within 72 hours
4. Documentation didn't exist

#### Revised Levels of Non-compliance: None – this requirement was combined with the requirement for 'actions'. The levels of non-compliance for the revised 'actions' requirement are:

1. An IROL exceeded and no documentation to indicate what actions were taken or directives were issued to mitigate the instance
2. Not applicable
3. Not applicable
4. IROL exceeded for time greater than or equal to  $T_v$  minutes

#### Summary Consideration:

This requirement was merged with the requirement for taking actions. The levels of non-compliance were modified to apply a mild sanction for not having filed a report a severe sanction for exceeding an IROL for a time greater than or equal to  $T_v$  minutes.

Alan Boesch NPPD #1	No Why is the timing of the report so important?
The timing of the report is not critical – but without some time factor, there is no incentive or direction on how quickly the report must be filed. Without a due date, some entities may not file the reports.	
Albert M. DiCaprio MAAC #2	No This requirement is a documentation requirement not a filing requirement (i.e. Level 1 is inappropriate)
The levels of non-compliance were adjusted in support of your comment	
Charles Yeung Reliant Energy #6	No These non-compliance levels do not specify what the conditions for an "incident" are. Does the standard rely on the definition of "reportable incident" proposed in Question #5 as the threshold for compliance measurement?
The revised standard does indicate what instances need to be reported – all instances where an IROL has been exceeded for time greater than or equal to the IROL's $T_v$ .	
Tom Petrich (5) PG&E #1	No The requirement for producing supporting document and corresponding unlogged violation seems too prescriptive and do not make allowance for emergencies, when keeping the system together should be more important than filling out forms.



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<p>The standard was revised to clarify what documentation must be kept. The documentation requested is simply factual information that should be immediately available – this standard does not require an analysis of the cause of the event.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>No Following up on our comments in 40, we believe that the levels would be 1. Some data was available but not enough to complete the analysis. Report was filed on time but was incomplete. 2. Not Applicable. 3. (We agree with level 3 as shown.) and 4) Data was wholly missing and / or documentation didn't exist.</p>
<p>The data that is required is simple factual data that should be immediately available.</p>	
<p>Sam Jones ERCOT #2OLDTF (9?) 6 - #2 1 - #1,5</p>	<p>No Level 3 implies a log is kept, but the information could be kept in some other form. The important point is that the supporting documents be available. Also, please refer to our response to Q40 and suggestion that the report be split into preliminary and final versions. <i>{ First, we believe this applies to IRL Compliance Violations only. Also, should split into a Preliminary Report and a "complete" Report. Preliminary Report should be submitted within 72 hours. A longer time is required for the "complete" report; probably a minimum of one month.}</i></p>
<p>The standard was revised to more clearly state that a log or other document must be kept to document: actions taken or directives issued; magnitude and duration of event. The report being addressed in this standard is simply a factual report of the data immediately available at the end of the event – this standard does not require an analysis of the event. There is another standard that is expected to require an analysis of events.</p>	
<p>Susan Morris SERC #2 Thomas Pruitt Duke #1 Robert Reed TS (See List)</p>	<p>No Question 40 needs to be addressed and resolved before the levels of non-compliance can be determined. <i>{ Delay this requirement until the OLDTF collaborates with the SDT to define "operating limits". These new limit definitions must also go through the standards process before formal implementation.}</i></p>
<p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed. The new definitions included in this standard are being posted for comment when the revised standard is posted for comment.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>No It is premature to develop compliance levels at this time.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Ed Riley CA ISO #2</p>	<p>No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Guy Zito (See List)</p>	<p>No</p>

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<p>NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No FRCC would like to wait until the "field test" of the OLDTF recommendation is completed to understand this requirement and its levels of non-compliance before commenting</p>
<p>The work of the OLDTF is in parallel with the work on the development of this standard. Since the OLDTF is testing measures that aren't the same as the measures in this standard, and since the report being tested by the OLDTF is asking for elements that aren't required under this standard, the results of the OLDTF field test have only minimal relevance to this standard.</p>	
<p>Doug Hils Cinergy #1</p>	<p>No Under some complicated conditions the 72 hours time limitation is too restrictive to investigate, and supply anything more than a preliminary report of a violation. More time could be required to investigate, compile, and supply the complete documentation of a violation.</p>
<p>The data required for the IROL Violation Report is simply factual data that is immediately available. This standard does not require an analysis of the causes of the event.</p>	
<p>Vern Colbert Dominion #1 Fred Frederick Vectren #3</p>	<p>No</p>
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes Agree assuming reporting requirements are commensurate with comments for question 6 &amp; 7.</p>
<p>The requirements were modified so that the types of events that must be reported have been clearly identified as instances of exceeding IROLs for time greater than or equal to the IROL's <math>T_v</math>.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes need to clearly define "supporting documentation" vs. "documentation". What about if a complete report was filed but it came after 72 hours? Is it preferable to file an incomplete report on time and follow up with a complete report later? Also – should "incident" be replaced with "reportable violation"?</p>
<p>The standard was revised to eliminate the need for 'supporting documentation'. In the revised standard, the measures indicate that a log may be sufficient documentation if it contains the data listed. The levels of non-compliance were modified and having a 'complete' report is no longer emphasized. The word, 'incident' was replaced with more specific language to indicate that the report is for instances of exceeding IROLs for time greater than or equal to the IROL's <math>T_v</math>.</p>	

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<p>Alan Johnson Mirant #6          Bob Burkard NCMPA1 # 3,4,5          Darrel Richardson Illinois Power #1, 3          Dilip Mahendra SMUD #1          ECAR Ops Panel #1 – 8 #5 – 1 #2 - 2          Ed Stein Firstenergy Sol #6          Francis Halpin BPA Bus Line #5,6          Gerald Rheault Manitoba #1,3,5,6          James Stanton Calpine #5          Joanne Borrell FirstEnergy Sol #3          Joe Minkstein PG&amp;E #5          John Blazekovich Exelon #1,3,5,6          Joseph Buch Madison #4          Karl Kohlrus CWL&amp;P #5          Kathleen Goodman ISO NE #2          Kim Warren IMO #2          Lloyd Linke MAPP #2          Mike Miller Southern Co #1          Peter Burke ATC #1          Raj Rana AEP #1,3,5,6          Ray Morella FirstEnergy #1          Richard Schwarz PNSC #2          Roman Carter So Co Gen 3,5,6 (6 members)          Stuart Goza TVA #1          Tony Jankowski We-Energies #4          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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## Consideration of Comments on 1st Posting of Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard

### 42. Requirement 17 - Do you agree with this requirement and its associated performance/outcome and measure/s?

#### Original Requirement

The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

#### Measure(s)

Data exists and is retrievable

#### Outcome(s)

The TOP shall have retrievable information that documents instances when it exceeded identified system operating limits.

**Revised Requirement: None**

#### Summary Consideration:

Many commenters indicated that this requirement should not be assigned to the TOP and a review of the Functional Model supports this position. This standard addresses just the subset of system operating limits that, if exceeded, could result in instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. In this revised standard, these limits are called interconnection reliability operating limits or IROLs. Under the Functional Model, the TOP is responsible for local network integrity and therefore could not be assigned the default responsibility of controlling the system to stay within these IROLs. This requirement was dropped from this standard. Because so many entities were in favor of a requirement for the TOP to monitor some system operating limits and report on exceeding those limits, the SDT sent a letter to the Director of Standards to inform him that there may be a need for another standard that addresses the TOP's responsibilities in protecting local network integrity.

Albert M. DiCaprio MAAC #2	No The TOP may do this for the RA, but it need not be a TOP function.
<a href="#">This requirement was dropped from this standard.</a>	
Richard Kafka Pepco #1	No This is self monitoring by the TOP
<a href="#">This requirement was dropped from this standard.</a>	
Lee Xanthakos SCE&G #1	No Why would the TOP do this if the RA is already doing it in Requirement 16? There is not need for the duplication.
<a href="#">This requirement was dropped from this standard.</a>	
Gregory Campoli NY ISO #2	No This requirement needs to be developed following the work of the NERC OLD TF.

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<p>This requirement was dropped from this standard.</p> <p>The work of the OLDTF is taking place in parallel with the development of this standard. The OLDTF is addressing today's standards and Policies; this Reliability Standard is being processed by an independent public process.</p>	
<p>David Kiguel Hydro One #1 Guy Zito (See List) NPCC #2 – 2 NPCC #1 - 5</p>	<p>No</p> <p>This aspect of the standard should be coordinated with the NERC OLD, Operating Limit Definition, Task Force . Presenting a standard that doesn't represent the current intentions of the OLD TF may produce RS that may be in conflict with the current understanding of the NERC Operating Committee. Therefore we recommend delay of further development of this RS until the work of the OLD TF is complete and approved. Please see our comments under item # 44 (Regional and Interconnection Differences).</p>
<p>The work of the OLDTF is taking place in parallel with the development of this standard. . Since the OLDTF is testing measures that aren't the same as the measures in this standard, and since the report being tested by the OLDTF is asking for elements that aren't required under this standard, the results of the OLDTF field test have only minimal relevance to this standard.</p>	
<p>OLDTF (9?) 6 - #2 1 - #1,5 Sam Jones ERCOT #2</p>	<p>No</p> <p>This Requirement needs to be reviewed with respect to the OLDTF report. If the Requirement refers to documenting SOL violations as defined by the OLDTF, then reporting may be required to the Regional Council. If the requirement refers to IRL Compliance Violations, then the RA needs to submit that report to the Regional Council and NERC.</p>
<p>The work of the OLDTF was submitted during the public posting of this standard and was considered as were all comments submitted during the public posting process.</p> <p>The SDT adopted most of the concepts proposed in the OLDTF report, but did not adopt all the specifics. As an example, the OLDTF is using a '30-minute' response time for all IRLs – this was not adopted for the proposed standard. As the new standards are being developed, the teams are challenging the establishment of requirements that aren't technically justified because they may have an unnecessary adverse impact on markets. The SDT couldn't identify a technical basis for a standard 30-minute response time – and could identify reliability-related scenarios where exceeding a limit for 30 minutes may be too long, and other scenarios where exceeding a limit for longer than 30 minutes may not pose an unacceptable risk to the interconnection.</p>	
<p>Vern Colbert Dominion #1</p>	<p>No</p> <p>See #40.</p> <p>{ Wait until the OLDTF study is complete.}</p>
<p>The work of the OLDTF was submitted during the public posting of this standard and was considered as were all comments submitted during the public posting process.</p> <p>The SDT adopted most of the concepts proposed in the OLDTF report, but did not adopt all the specifics. As an example, the OLDTF is using a '30-minute' response time for all IRLs – this was not adopted for the proposed standard. As the new standards are being developed, the teams are challenging the establishment of requirements that aren't technically justified because they may have an unnecessary adverse impact on markets. The SDT couldn't identify a technical basis for a standard 30-minute response time – and could identify reliability-related scenarios where exceeding a limit for 30 minutes may be too long, and other scenarios where exceeding a limit for longer than 30 minutes may not pose an unacceptable risk to the interconnection.</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>No</p> <p>See comments to question 40.</p> <p>{ However, there are too many "irons in the fire" just now. The NERC OC has a task force working on this particular issue, and as indicated in the March OC meeting highlights, have directed the Reliability Coordinators to "field test" the</p>

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	<i>OLDTF's definition and reporting form. The results of this "field test" need to be considered in this requirement.</i>
<p>The field testing of the OLDTF's proposal does not affect this publicly-debated standard. The OLDTF is addressing today's standards and Policies; this Reliability Standard is being processed by an independent public process.</p> <p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
Robert Reed TS (See List)	<p>No See 40.</p> <p><i>{ Delay this requirement until the OLDTF collaborates with the SDT to define "operating limits". These new limit definitions must also go through the standards process before formal implementation. }</i></p>
<p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
Charles Yeung Reliant Energy #6	<p>No</p> <p>Same comments as for questions #34 and #40.</p> <p><i>{ It is unclear what the relationship and responsibilities of the TOP are as compared to the RA. The Standard proposes the same language for both functions. What is the reporting relationship and operational hierarchy between the RA and the TOP? Is the TOP analysis more "local" in nature than the RA analysis? What if each one's analysis does not agree? Which analysis will prevail to ensure grid reliability? }</i></p> <p><i>{ It is unclear as to how the system operating limits are established and by who. It is also unclear what the specified period of time that the system exceeds the limit is established and by who. These limits and time periods must be known and pre-approved in a process where all parties that may be affected by the violation can comment. }</i></p>
<p>This requirement was dropped from this standard. This requirement is the responsibility of the RA and not the TOP. The system operating limits addressed in this standard are set by the RA following the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The time component (T<sub>v</sub>) is added by the RA when the limit is identified as an IROL type of system operating limit. The TOP also establishes some system operating limits – but the limits established by the TOP are aimed at protecting the reliability of local networks. The system operating limits established by the TOP are also established following the Determine Facility Ratings ... standard.</p>	
Raj Rana AEP #1,3,5,6	<p>No</p> <p>We agree with the intent, but for this requirement the language is too brief. How long must the TOP keep this data?</p>
<p>This requirement was dropped from this standard. For the same requirement assigned to the RA, the data must be retained for three years. The reason for the three years is to ensure that when the compliance monitor conducts its routine audit, there will be some data to review. Compliance monitors currently review each entity once every three years.</p>	
Peter Burke ATC #1	<p>No</p> <p>The requirement's use of the word "identified" creates confusion by implying the existence of OSL's not identified or, worse, that the TOP requirement is somehow dependent on the TOP's act of identifying something which invites</p>

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	<p>failure, intentional or otherwise, to identify and document violations.</p> <p>Must all OSL violations fall under the purview of this standard or only those OSL violations with regional impact? If this standard applies for every violation, including minor line overloads, etc., the documentation and reporting requirements would be overwhelming.</p> <p>The requirement should dictate how long documentation must be retained.</p>
<p>This requirement was dropped from this standard.</p> <p>Under the revised standard, the RA must identify the subset of all system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system – these limits are interconnection reliability operating limits or IROLs.</p> <p>The revised standard indicates that the operating log may be sufficient documentation if it contains the actions taken or directives issued, and the magnitude and duration of exceeding the IROL.</p>	
<p>ECAR Ops Panel</p> <p>#1 – 8</p> <p>#5 – 1</p> <p>#2 - 2</p>	<p>No</p> <p>1) The existing NERC template on Operating Security Limits is confusing. This standard is much, much, much more confusing. There are many system operating limits. This standard does not say which system operating limit has to be reported and under what conditions it has to be reported. Do you have to report a system operating limit exceedance that has little impact on bulk power reliability. If so you'll get thousands of irrelevant reports every week for minor system operating limit exceedances. A report should be filed when a Operating Security Limit has been exceeded for 30 minutes per the existing NERC Policy. See the definition of an Operating Security Limit Violation under item 7 of this questionnaire. Requirement 216 has to be much more specific. If one cannot supply the specifics then this standard is not ready for balloting.</p> <p>2) Requirements 216 and 217 are very similar. Requirement 216 applies to Reliability Coordinators. Requirement 217 applies to Transmission Operators. The requirements are duplicative. The standard should require the documenting of Operating Security Limit violations by either the Reliability Coordinator or the Transmission Operator, but not both of them. There is nothing wrong with both documenting the violations if they so wish, but both of them should not be forced to do so. There is nothing wrong with a Transmission Operator delegating this responsibility to a Reliability Coordinator or a Reliability Coordinator delegating this responsibility to a Transmission Operator. (3) The standard needs to clarify the difference between a reportable incident and an incident that is not reportable but must be documented.</p>
<p>This requirement was dropped from this standard.</p> <p>Under the revised standard, the RA must identify the subset of all system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system – these limits are interconnection reliability operating limits or IROLs.</p> <p>The revised standard clarifies that each instance of exceeding an IROL must be documented by the RA, and each instance of exceeding an IROL for a time greater than or equal to that IROL's T<sub>v</sub> must be reported by the RA.</p>	
<p>Ed Stein</p> <p>Firstenergy Sol #6</p>	<p>No</p> <p>See the response to question 40</p> <p><i>{This is very confusing because this standard does not identify which operating limits have to be reported and what conditions trigger a reporting event. As an example; a construction project requires a reconfiguration of a power plant substation. This reconfiguration creates a situation where the generating units</i></p>

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	<p><i>operating at full load may go unstable with a three phase fault outside the substation and a breaker fail to trip condition. Operational planning studies will show that reducing the plant generation to 60% allows the units to remain stable during the fault conditions. Does this become an operating limit? What happens if the transmission operator elects to take the chance and keep the units operating at full load because the system is capacity short, the UN peace keeping negotiating team is in town, and the probability of having a bolted three phase fault with a stuck breaker is very,very low. Has the operator violated an operating limit? Does the operator have to complete a violation document? This standard has to define what is a violation and when does the violation have to be reported and documented.}</i></p>
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This requirement was dropped from this standard.

Under the revised standard, the RA must identify the subset of all system operating limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system – these limits are interconnection reliability operating limits or IROLs.

The revised standard clarifies that each instance of exceeding an IROL must be documented by the RA, and each instance of exceeding an IROL for a time greater than or equal to that IROL's T<sub>v</sub> must be reported by the RA.

<p>Darrel Richardson Illinois Power #1, 3</p>	<p>No Throughout this SAR, the requirements of the RA and TOP have been pretty much mirrored. However this one seems to be very vague. To some degree Requirement 17 should parallel Requirement 16.</p>
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This requirement was dropped from this standard.

<p>Kathleen Goodman ISO NE #2</p>	<p>No ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC with 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.  By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.</p>
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The DT intent is in complete agreement with NPCC's concept. The issue of pre-identified limits is merely to excuse RAs from being held accountable for studies that were not predictable.

<p>Doug Hils Cinergy #1</p>	<p>No This requirement is too restrictive and would require maintaining a living alarm program to take into account the actual ambient temperatures, actual loading level for rating of equipment that varies by temperature changes. Many alarm levels are set at a temperature extreme and the operators compare the actual temperature and loading to the acceptable level at the given ambient temperature. Alarm files could not be used as a legitimate violation file.</p>
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This requirement was dropped from this standard.



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<p>The standard does not mandate any given approach to computing IROLs; the standards defines when response is required. Dynamic limits are neither forbidden nor required, the RA is expected to make that decision.</p>	
<p>Ray Morella Joanne Borrell FirstEnergy #1, 3, Fred Frederick Vectren #3</p>	<p>No</p>
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes See comment for #40. <i>{Manitoba Hydro is concerned about the amount of data that may be required to be collected for this requirement. Perhaps there needs to be some sampling process or investigation only when multiple violations occur or when a system disturbance results}</i></p>
<p>This requirement was dropped from this standard. The revised requirement for the RA clarifies that an operating log may be sufficient documentation as long as it documents the RA's actions or directives, the magnitude of the event and the duration of the event.</p>	
<p>George Bartlett Entergy Svcs 1</p>	<p>Yes We believe that our answers to questions 40 and 41 are also significant here. <i>{How can an RA prove the negative, that is, how can they prove that a violation of system operating limits did not occur, unless they keep all operational data for some length of time? NERC needs to carefully consider this requirement, as the operational data generated on an hourly basis with a 4 second scan rate is unbelievably voluminous. We would prefer that a short rolling time limit be set for the retention of all EMS data, such as 3 months. There should be some kind of investigation procedure that triggers the analysis of this data on a post-event basis.}</i>  <i>{Following up on our comments in 40, we believe that the levels would be 1. Some data was available but not enough to complete the analysis. Report was filed on time but was incomplete. 2. Not Applicable. 3. (We agree with level 3 as shown.) and 4) Data was wholly missing and / or documentation didn't exist.}</i></p>
<p>This requirement was dropped from this standard. The revised requirement for the RA clarifies that an operating log may be sufficient documentation as long as it documents the RA's actions or directives, the magnitude of the event and the duration of the event. The report addressed in this standard is merely a report of the facts that are immediately available at the end of the event – the report does not require an analysis of the event.</p>	
<p>Roman Carter So Co Gen 3,5,6 (6 members)</p>	<p>Yes Are there current reports available to better identify what the cause was for exceeding the security limit and would this report be available within 72 hours to meet the documentation requirement above? If not, maybe the timeframe should be changed.</p>
<p>This requirement was dropped from this standard. There is another standard that addresses analysis of events. The report addressed in this standard is merely a report of the facts that are immediately available at the end of the event.</p>	
<p>Toni Timberman</p>	<p>Yes</p>

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BPA #1	Requirement is for TOP to document exceeding system limits, regardless of duration? What is "data" in the measure referring to?
<p>This requirement was dropped from this standard. The standard addresses just the subset of system operating limits that, if exceeded, could result in instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. These limits are not under the responsibility of the TOP.</p>	
Lee Westbrook Oncor #1	Yes Words should more closely match Requirement 16.
<p>This requirement was dropped from this standard.</p>	
Kim Warren IMO #2	Yes Is logging not sufficient? Whats the distinction between "document" & "log"?
<p>This requirement was dropped from this standard.</p> <p>The same requirement for the RA was revised to clarify that for many entities, an operating log may be sufficient documentation.</p>	
Thomas Pruitt Duke #1 Todd Lucas (6?) Southern Co #1 Susan Morris SERC #2	Yes See 40. <i>{Delay this requirement until the OLDTF collaborates with the SDT to define "operating limits". These new limit definitions must also go through the standards process before formal implementation.}</i>
<p>The OLDTF is addressing today's standards and Policies; this Reliability Standard is being processed by an independent public process.</p> <p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
Lloyd Linke MAPP #2	Yes System Operating Limit should be in caps to be consistent with the definition on page 2.
<p>This requirement was dropped from this standard.</p> <p>The format for new Reliability Standards includes capitalization of just proper nouns.</p>	

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Alan Boesch NPPD #1 Alan Johnson Mirant #6 Bob Burkard NCMPA1 # 3,4,5 Dilip Mahendra SMUD #1 Ed Riley CA ISO #2 Francis Halpin BPA Bus Line #5,6 James Stanton Calpine #5 Joe Minkstein PG&E #5 John Blazekovich Exelon #1,3,5,6 Joseph Buch Madison #4 Karl Kohlrus CWL&P #5 Mike Miller Southern Co #1 Stuart Goza TVA #1 Tom Petrich (5) PG&E #1 Tony Jankowski We-Energies #4 William Smith Allegheny Pwr #1	Yes
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**43. Requirement 17 - Do you agree with these levels of non-compliance for this requirement?**

<p><b>Original Levels of Non-compliance</b></p> <ol style="list-style-type: none"> <li>1. Not Applicable</li> <li>2. Not Applicable</li> <li>3. Not Applicable</li> <li>4. Documentation didn't exist</li> </ol>
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<p><b>Revised Levels of Non-compliance: None</b></p>
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**Summary Consideration:**

This requirement and its associated levels of non-compliance have been dropped from this standard.

<p>Gregory Campoli NY ISO #2</p>	<p>No It is premature to develop compliance levels at this time.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Thomas Pruitt Duke #1 Robert Reed TS (See List)</p>	<p>No Question 42 needs to be addressed and resolved before the levels of non-compliance can be determined.</p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard.</p>	
<p>Susan Morris SERC #2</p>	<p>No Question 42 needs to be addressed and resolved before the levels of non-compliance can be determined. In general there should be at least two levels of non-compliance identified.</p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>No It was felt that in order to properly address the compliance issues the RS must be well defined and more development is needed before a determination can be made whether these levels are appropriate.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	
<p>Ed Riley CA ISO #2</p>	<p>No The CAISO feels that the compliance with Standards should be addressed separately from the Standards themselves. Therefore this section should be removed from the Standard.</p>
<p>The new standards development process includes development of the compliance elements in concert with the development of the requirements and measures. By developing both at the same time, the goal is to avoid developing and agreeing on requirements and measures that can't be objectively measured.</p>	

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Ken Skroback AL Elec Coop #4	No If you had no instance of exceeding an operating limit, no documentation would exist and you would be Level 4 non-compliant.
This requirement and its associated levels of non-compliance have been dropped from this standard.	
Karl Kohlrus CWL&P #5	There should be a reminder sent out if the data is not sent initially before going directly to Level 4.
This requirement and its associated levels of non-compliance have been dropped from this standard.	
FRCC 6-#1, 4-#2, 1-#2	No See comments to question 41. <i>{ FRCC would like to wait until the "field test" of the OLDTF recommendation is completed to understand this requirement and its levels of non-compliance before commenting}</i>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard.</p> <p>The field testing of the OLDTF's proposal does not affect this publicly-debated standard. The OLDTF is addressing today's standards and Policies; this Reliability Standard is being processed by an independent public process.</p> <p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
Sam Jones ERCOT #2	Please see comments to #42 above. <i>{ERCOT agrees with the OLDTF report and feels that this Requirement needs to be reviewed with respect to that report. If the Requirement refers to documenting SOL violations as defined by the OLDTF, then reporting may be required to the Regional Council. If the Requirement refers to IRL Compliance Violations, then the RA needs to submit the report to the Regional Council and NERC.}</i>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard.</p> <p>The field testing of the OLDTF's proposal does not affect this publicly-debated standard. The OLDTF is addressing today's standards and Policies; this Reliability Standard is being processed by an independent public process.</p> <p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed.</p>	
Vern Colbert Dominion #1 Richard Kafka Pepco #1 Fred Frederick Vectren #3 Albert M. DiCaprio MAAC #2	No
Yes – Comments indicating levels of non-compliance need adjustment	
George Bartlett Entergy Svcs 1	Yes/No Levels of noncompliance should include Level 3, Data doesn't exist. We believe that our answers to questions 40 and 41 are also significant here. <i>{How can an RA prove the negative, that is, how can they prove that a violation of system operating limits did not occur, unless they keep all operational data for</i>

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	<p><i>some length of time? NERC needs to carefully consider this requirement, as the operational data generated on an hourly basis with a 4 second scan rate is unbelievably voluminous. We would prefer that a short rolling time limit be set for the retention of all EMS data, such as 3 months. There should be some kind of investigation procedure that triggers the analysis of this data on a post-event basis.}</i></p> <p><i>{Following up on our comments in 40, we believe that the levels would be 1. Some data was available but not enough to complete the analysis. Report was filed on time but was incomplete. 2. Not Applicable. 3. (We agree with level 3 as shown.) and 4) Data was wholly missing and / or documentation didn't exist.}</i></p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard. For the same RA requirement, the data addressed in the report is data that is immediately available following an event –the actions taken or directives issued, the magnitude and duration of the event. This standard will not require an analysis of the event. There is another standard that is expected to require an analysis of the event.</p>	
<p>Lloyd Linke MAPP #2</p>	<p>Yes Level #4 should read “Data didn’t exist” instead of “Documentation didn’t exist”</p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard. The same requirement for the RA was clarified to indicate that the documentation could be an operations log or other document that shows the RA’s actions or directives, and the magnitude and duration of the event.</p>	
<p><b>Yes – Other comments</b></p>	
<p>Darrel Richardson Illinois Power #1, 3</p>	<p>Yes However, the term “documentation” needs to be better defined since this Requirement is so vague.</p>
<p>This requirement and its associated levels of non-compliance have been dropped from this standard. The same requirement for the RA was clarified to indicate that the documentation could be an operations log or other document that shows the RA’s actions or directives, and the magnitude and duration of the event.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes See comments for #40. <i>{ Agree assuming reporting requirements are commensurate with comments for question 6 &amp; 7.}</i></p>
<p>This requirement and its associated levels of non-compliance were dropped from this standard.</p>	

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<p>Alan Boesch NPPD #1          Alan Johnson Mirant #6          Bob Burkard NCMPA1 # 3,4,5          Dilip Mahendra SMUD #1          Doug Hils Cinergy #1          ECAR Ops Panel #1 – 8 #5 – 1 #2 - 2          Ed Stein Firstenergy Sol #6          Francis Halpin BPA Bus Line #5,6          Gerald Rheault Manitoba #1,3,5,6          James Stanton Calpine #5          Joanne Borrell FirstEnergy Sol #3          Joe Minkstein PG&amp;E #5          John Blazekovich Exelon #1,3,5,6          Joseph Buch Madison #4          Kathleen Goodman ISO NE #2          Kim Warren IMO #2          Mike Miller Southern Co #1          Peter Burke ATC #1          Raj Rana AEP #1,3,5,6          Ray Morella FirstEnergy #1          Roman Carter So Co Gen 3,5,6 (6 members)          Stuart Goza TVA #1          Tom Petrich (5) PG&amp;E #1          Toni Timberman BPA #1          Tony Jankowski We-Energies #4          William Smith Allegheny Pwr #1</p>	<p>Yes</p>
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**44. Are you aware of any Regional or Interconnection Differences that should be included in this Standard? If so, please identify what you feel should be added.**

<p>David Kiguel Hydro One #1</p>	<p>Yes</p> <p>There are differences in some Areas. For example, in Ontario the IMO is solely responsible to determine operating limits and to direct the operation of the IMO-Controlled Grid within these limits. The Transmission owners/operators operate their respective systems under the IMO's direction. They only provide the IMO with equipment ratings which the IMO must respect. The transmission operators do not determine operating limits or monitor/report their compliance.</p> <p>The standard should reflect jurisdictional differences in the responsibilities assigned to the RA and TOP in some areas.</p>
<p>The revised standard eliminates the duplicate responsibilities for the TOP. In the revised standard, the RA is responsible for establishing the limits and for either acting or directing other entities to act to stay within those limits. The revised standard seems to match the way the IMO is operating, assuming the IMO is acting as an RA.</p>	
<p>Peter Burke ATC #1</p>	<p>No</p> <p>Actually, how would the MISO "Day 2" market, as proposed, conform to the definitions proposed in this new standard?</p>
<p>This standard does not define procedures, it assigns responsibilities.</p> <p>Whoever has the final acknowledged responsibility for shedding load will be the one responsible for identifying IROLs and will be responsible for taking, directing or delegating responses to IROLs. Whoever, serves that role in MISO will be assigned the responsibilities of RA and obligated to comply to this standard. If that entity delegates some other entity to do the calculations and the other group to respond to the IROLs then that entity (i.e. the one doing the delegating) has transferred the obligation but still retains the responsibility.</p>	
<p>Kim Warren IMO #2</p>	<p>Yes</p> <p>Understanding that different companies have different operational setups and duties/requirements can sometimes cross boundary lines between different authorities (i.e. RA/TOP/TOW). In some case the RA and the TOP perform the same functions as defined in this SAR but that entity may not perform other duties such as switching, maintenance or notification of outages or construction plans which are also described as roles that the TOP is accountable for in the Functional Model.</p> <p>In other case, some duties as defined in the SAR process may be duplicated or shared or the accountabilites for which limits may need to be clarified.</p>
<p>This standard does not define procedures, it assigns responsibilities. In the revised standard, the duplicate requirements for the TOP have been dropped.</p> <p>Whoever has the final acknowledged responsibility for shedding load will be the one responsible for identifying IROLs and will be responsible for taking, directing or delegating responses to IROLs. Whoever, serves that role in MISO will be assigned the responsibilities of RA and obligated to comply to this standard. If that entity delegates some other entity to do the calculations and the other group to respond to the IROLs then that entity (i.e. the one doing the delegating) has transferred the obligation but still retains the responsibility.</p>	
<p>Gerald Rheault Manitoba #1,3,5,6</p>	<p>Yes</p> <p>Manitoba Hydro believes that the requirements for monitoring system operating limits in real time in a thermally constrained network and for a stability constrained network are significantly different. The time limitations in a stability constrained network does not allow the RA or TOP to use online reliability analysis tools in the same way as they can be used in a thermally constrained tight network. The RA in a stability constrained network will be required to operate to predefined</p>



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	<p>operating limits which have been determined from extensive operational planning analysis. The RA in a thermally constrained network can operate to real time defined limits because of the much slower system reaction time.</p> <p><b>Requirement 1 and Requirement 2 must be worded in a manner to ensure that both the RA and TOP for thermally constrained and for stability constrained networks can meet the requirements of the Standard.</b></p>
<p>The DT met with representatives of both the OLDTF and the Facilities Rating Standards DT and agreed to adopt the term Interconnection Reliability Operating Limit (IROL). This term refers to what is the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>There are many System Operating Limits (using the Facility Ratings Standard’s terminology) , but only those System Operating Limits that could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system will be defined as IROLs The other system Operating Limits are not addressed in this standard.</p>	
<p>Compliance Mgrs Compliance Subcom</p>	<p>The work of the OLDTF has shown that there are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions. The Standard and its compliance measurements should not dictate whether a particular RA should operate in a predictive or a responsive mode (i.e., take action in advance to prevent an overload based on predictive analysis, or take steps to mitigate an actual overload only on occurrence)</p> <p>The above statement is not reflective of most comments, and represents a minority opinion for consideration.</p>
<p>The definition of IROL and the requirement that each RA identify its IROLs and its facilities that are subject to IROLs should help ensure that RAs are interpreting IROLs in the same way across regional boundaries. The standard does require that the RA have an action plan and it is difficult to see the objection to using this plan. How would this be a Regional Difference?</p>	
<p>Susan Morris SERC #2 Robert Reed TS (See List)</p>	<p>Yes</p> <p>The work of the OLDTF has shown that there are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions. The Standard and its compliance measurements should not dictate whether a particular RA should operate in a predictive or a responsive mode (i.e., take action in advance to prevent an overload based on predictive analysis, or take steps to mitigate an actual overload only on occurrence)</p>
<p>The definition of IROL and the requirement that each RA identify its IROLs and its facilities that are subject to IROLs should help ensure that RAs are interpreting IROLs in the same way across regional boundaries.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes</p> <p>There are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions.</p>
<p>The definition of IROL and the requirement that each RA identify its IROLs and its facilities that are subject to IROLs should help ensure that RAs are interpreting IROLs in the same way across regional boundaries.</p>	
<p>Thomas Pruitt Duke #1</p>	<p>Yes</p> <p>Standards need to be written to accommodate regulatory jurisdictions and the differences that exist between them. In certain jurisdictions, third party disaggregated functions will not be allowed, or will not be allowed to perform in the same manner as in other jurisdictions.</p> <p>The work of the OLDTF has shown that there are differences in the interpretation and response to limit determinations and violations among the interconnections and Regions. The Standard and its compliance measurements should not dictate whether a particular RA should operate in a predictive or a responsive mode (i.e.,</p>

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	take action in advance to prevent an overload based on predictive analysis, or take steps to mitigate an actual overload only on occurrence).
<p>The standard has undergone significant revisions and the duplicate requirements for the TOP have been dropped from this standard. In its revised format, the standard supports the Functional Model and the division of responsibilities between functions. If the revised standard has any requirements that conflict with existing jurisdictional regulatory requirements, please provide specific information letting us know which requirement conflicts with which regulation and the name of the regulatory agency.</p> <p>The definition of IROL and the requirement that each RA identify its IROLs and its facilities that are subject to IROLs should help ensure that RAs are interpreting IROLs in the same way across regional boundaries. The standard does require that the RA have an action plan and it is difficult to see the objection to using this plan.</p>	
<b>FRCC</b>	
FRCC 6-#1, 4-#2, 1-#2	<p>Yes</p> <p>The FRCC Security Process (Reliability Plan) has requirements for real time and operations planning analysis. NERC needs to be very careful when attempting to require certain periodicity for studies as each region may already have established what it requires.</p>
<p>The revised standard indicates that an operational planning analyses be conducted at least once each day, and that a real-time assessment be conducted at least once every 30 minutes. If FRCC's requirements are less stringent than this, then please let us know so we can ask the industry for feedback on whether or not this is endorsed as a Regional Difference. If FRCC's requirements are more stringent than this, then a Regional Difference is not required as part of this standard.</p>	
<b>ERCOT</b>	
Sam Jones ERCOT #2 OLDTF (9?) 6 - #2 1 - #1,5	<p>Yes</p> <p>In the ERCOT Region, ERCOT uses ratings provided by the equipment owners to determine the limits. The TOP doesn't determine them.</p> <p>In some Regions or Interconnections, the RA may delegate certain tasks to other functions, though the RA is responsible for ensuring that these tasks are performed. There needs to be some kind of general statement to this effect. Perhaps this is being addressed in the Functional Model.</p>
<p>The IROLs addressed in this standard are developed following the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. Under the Facility Ratings Standard, equipment owners provide facility ratings to the RA and TOP for use in determining system operating limits.</p> <p>Whoever has the final acknowledged responsibility for shedding load will be the one responsible for identifying IROLs and will be responsible for taking, directing or delegating responses to IROLs. Whoever, serves that role is fulfilling the responsibilities of RA and is obligated to comply with this standard. If that entity delegates some other entity to do the calculations and the other group to respond to the IROLs then that entity (i.e. the one doing the delegating) has transferred the obligation but still retains the responsibility.</p>	

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<b>SERC</b>	
Vern Colbert Dominion #1	Yes It has been shown that there are significant regional differences both in agreements between TOPs and RAs, and in the modeling capabilities and programs available. The SAR states that regional differences are 'none identified'. This is not true. RA audits in SERC for one identified many differences that should be taken into consideration.
<p>This standard does not define procedures, it assigns responsibilities.</p> <p>The 'none identified' means that during the SAR development process, no Regional Differences related to specific requirements or measures have been identified. This may change as this standard is revised. Regional Differences can be identified during the SAR development or during the standard development phases of this process.</p> <p>If you are aware of any SERC requirement or measure that is less stringent than the requirements and measures in this proposed standard, please submit these as Regional Differences.</p>	
<b>WECC</b>	
Francis Halpin BPA Bus Line #5,6	Yes In the West, differences are settled through the WECC OTCPC process.
<p>The Regional Differences referenced here are requirements or measures that are less stringent in a Region than in the proposed standard. Reference the Reliability Standards Process Manual for a description of Regional Differences.</p>	
Ed Riley CA ISO #2	Yes The usage and definition of the term "violation" varies between the different entities. See definitions offered in comments on question #7.
<p>The revised standard attempts to clarify what is considered a 'violation'. If this definition is not acceptable to WECC, please let us know when the revised standard and its associated definitions are posted.</p>	

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**45. Is the draft standard missing any requirements that should be added. If so, please identify what you feel should be added.**

<p>Compliance Mgrs Compliance Subcomm</p>	<p>There is a need to clearly establish the functional relationships in a NERC document. That is, all load must either be a BA or have a BA. Each BA must have an RA. And so on. With these relationships established, the requirements can be established for the RA and the RA can establish requirements for membership through contracts. This will help to get rid of some Regional differences.</p> <p>1) The OLDTF has definitions that need to be considered prior to finalizing this standard.</p> <p>2) Operating limits that should be secured should include voltage collapse transfer limits in addition to equipment ratings violations.</p> <p>3) Confidentiality of data needs to be addressed. Transmission line flows and generator outputs have commercial implications in real-time market-based systems. The Standard should recognize this concern.</p>
<p>Establishing functional relationships is outside the scope of this SDT.</p> <p>The OLDTF submitted their report to the SDT during this draft standard’s public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed. The SDT met with representatives of both the OLDTF and the Facilities Rating Standards DT and agreed to adopt the term Interconnection Reliability Operating Limit (IROL).</p> <p>This standard does not specifically address voltage collapse transfer limits or equipment ratings violations. This standard addresses any system operating limit that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>Data confidentiality is being addressed as a certification requirement in the Certification SARs currently under development.</p>	
<p>Susan Morris SERC #2</p> <p>Thomas Pruitt Duke #1</p> <p>Todd Lucas (6?) Southern Co #1</p> <p>Robert Reed TS (See List)</p>	<p>Yes</p> <p>1) The OLDTF has definitions that need to be considered prior to finalizing this standard.</p> <p>2) Operating limits that should be secured should include voltage collapse transfer limits in addition to equipment ratings violations.</p> <p>3) Confidentiality of data needs to be addressed. Transmission line flows and generator outputs have commercial implications in real-time market-based systems. The Standard should recognize this concern.</p>
<p>The OLDTF submitted their report to the SDT during this draft standard’s public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed. The SDT met with representatives of both the OLDTF and the Facilities Rating Standards DT and agreed to adopt the term Interconnection Reliability Operating Limit (IROL).</p> <p>This standard does not specifically address voltage collapse transfer limits or equipment ratings violations. This standard addresses any system operating limit that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.</p> <p>Data confidentiality is being addressed as a certification requirement in the Certification SARs currently</p>	

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<a href="#">under development.</a>	
<p>OLDTF (9?) 6 - #2 1 - #1,5 Sam Jones ERCOT #2</p>	<p>Yes Should consider the definitions and recommendations developed by the Operating Limit Definition Task Force as endorsed by the Operating Committee.</p>
<p>The OLDTF submitted their report to the SDT during this draft standard's public posting and comment period. The SDT considered the recommendations of the OLDTF in the same manner that the SDT considered all recommendations submitted during the public posting period. The SDT is doing their work as part of an open standards development process and will not wait for the work of the OLDTF to be completed. The SDT met with representatives of both the OLDTF and the Facilities Rating Standards DT and agreed to adopt the term Interconnection Reliability Operating Limit (IROL).</p>	
<p>FRCC 6-#1, 4-#2, 1-#2</p>	<p>Yes See comments to the questions. We have already identified some of these, especially with regard to the BA, TOP etc implementing mitigation plans, providing data etc.</p>
<p>All of the individual comments were considered. The duplicate requirements for the TOP were dropped from the revised standard – and the requirement that the BA provide data was also dropped from the revised standard.</p>	
<p>Tony Jankowski We-Energies #4</p>	<p>Yes Need to define when operations transfer to “Abnormal and Emergency” Standard Requirements.</p>
<p>These terms are not required by this standard. This standard is to apply at all times and conditions.</p>	
<p>Toni Timberman BPA #1</p>	<p>Yes Requirement that “TOP Shall Provide” data, as specified</p>
<p>A requirement was added for the TOP to provide data to its RA.</p>	
<p>Todd Lucas (6?) Southern Co #1</p>	<p>Yes The standard should incorporate requirements to provide “real time” data as indicated in earlier comments.</p>
<p>This has been added to this standard.</p>	
<p>Roger Green Southern Co #5</p>	<p>Yes The standard clearly identifies the obligation of generators to provide data to the RA's and TOP's stating in the background that there are various ways generators may be obligated to provide data. A requirement needs to be added addressing the obligation of the RA's and TOP's to likewise provide data to the generators. Additions, deletions, or other changes to the bulk transmission system can impact the accuracy of models used to monitor and assess the adequacy of generating plants, their protective schemes and their interconnections to the grid. An example is any system changes affecting system impedance or changes in transmission relay settings that require coordination with plant relays. One miscoordination between plant relays and transmission relays could result in the tripping of an entire four unit 4000MW plant which is not a contingency normally planned for. Another is any system impedance changes that can affect generator excitation system settings (MEL and URAL) which can result in reactive limits being reached and cascading unit trips.</p>
<p>This standard deals with operating to known limits. The requirement for computing and coordinating the data belongs with the standard for Facility Ratings.</p>	
<p>Richard Schwarz</p>	<p>Yes</p>

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PNSC #2	TOP shall provide data as specified.
This requirement was added to the revised standard.	
Raj Rana AEP #1,3,5,6	<p>Yes</p> <p>There is no requirement that reliability data recipients have to be a signatory to the NERC Data Confidentiality agreement. This needs to be codified somewhere in the new standards.</p> <p>This standard should define the minimum type of data that is to be provided to the RA, similar to Policy 4B and Appendix 4B requirements today.</p> <p>There should be a requirement that the TOP, BA, IA, PA, and Generators provide data on a continuing basis as requested (or as per the defined minimum data requirements suggested in #2 above) and needed by the RA to perform their reliability analysis.</p> <p>There needs to be a definition of operational planning analysis and a requirement that sets the minimum standards of scope and frequency for such analysis.</p> <p>There needs to be a requirement for the minimum frequency of performance of real-time analysis.</p>
<p>Under the revised standard, the only recipient of data is the RA. The Certification SARs currently under development include a requirement that the RA sign a confidentiality agreement.</p> <p>This standard does not include a definition of the minimum type of data to be provided to the RA. Any list of data requirements would be more specific than needed by some RAs, and not specific enough for other RAs.</p> <p>The revised standard does say that data must be provided as specified by the RA. The data specification must include the time frame for providing data. The revised standard more clearly states that data for real time status relative to IROs is included in the data that must be provided to the RA.</p> <p>The revised standard does include a definition of operational planning analysis and requires that one be conducted at least once each day looking at the day ahead. The definition of an operational planning analysis is: An analysis of the expected system conditions, given the peak load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions.</p> <p>The revised standard includes a requirement that real-time analyses be conducted at least once every 30 minutes.</p>	
Peter Burke ATC #1	<p>Yes</p> <p>It is unclear how fines are levied based on \$'s or \$'s/MW. Some examples may be of value that show people the cost of non-compliance. The pricing signals may (or may not) push people to improve their processes to achieve compliance sooner than later.</p>
We will ask the Director-Compliance to put together some examples.	
Mike Miller Southern Co #1	<p>Yes</p> <p>Previous comments</p>
Each comment was considered.	
Lloyd Linke MAPP #2	<p>Yes</p> <p>See comments already made above regarding the scope of the definition of system operating limits.</p>

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<p>The revised standard includes a new term and its associated definition to clarify what subset of system operating limits is addressed in this standard. The term is, 'interconnection reliability operating limits' and its definition is:</p> <p>A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p>	
<p>Kim Warren IMO #2</p>	<p>Yes</p> <p>Local Areas</p> <p>Clearly differentiate between electrical areas that can cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and those areas that don't (Local Areas).</p>
<p>The revised standard does not use the term, 'local area'.</p>	
<p>Kathleen Goodman ISO NE #2</p>	<p>Yes</p> <p>In the current format of the existing draft SARs, it appears as though two very fundamental reliability requirements may be lost: (1) a Reserve Requirement; and (2) a CPS2-like requirement (a standard which accounts for ACE variations in addition to frequency control).</p>
<p>The Reliability Standards process does allow anyone to propose a standard requiring given procedures. The current consensus seems to be to provide the flexibility for entities to meet NERC standards with any procedures they, the entities, desire. ISO-NE is not prohibited from employing a reserve requirement or a CPS2-like procedure. The difference is that NERC may not be mandating such a requirement on all entities. Recall that NPCC opposed the NERC definition of Spinning Reserve because NPCC felt that the NERC provisions were too restrictive. The new process allows such differences as a normal course of operating.</p>	
<p>Joseph Buch Madison #4</p>	<p>Yes</p> <p>The standard refers to "data" which is to be requested or provided. However what constitutes this data is vaguely defined or undefined. Certain key items which constitute part of this data need definition either as part of the initial issuance of this standard or as part of the next revision. See comments in question 47.</p>
<p>The standard does not specify what data must be provided to the RA – each RA is required to develop and distribute a data specification that addresses the data it needs. Any 'standard' list of data requirements would be more restrictive than needed for some RAs, and less restrictive than needed by other RAs.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 – 2</p> <p>Ed Stein Ray Morella Joanne Borrell Firstenergy #1,3,6</p>	<p>Yes</p> <p>Throughout the standard the term Reliability Authority is used. This term is out of date and has been replaced by Reliability Coordinator. Is the Reliability Authority in this questionnaire identical to the Reliability Coordinator function? This issue needs clarification. If the Reliability Authority in this questionnaire is different than the Reliability Coordinator function, there needs to be an explanation of the difference.</p> <p>Throughout the standard the term 'system operating limit' is used. This term should be replaced with the term 'Operating Security Limit'. There are many different system operating limits. These standards do not apply to all of them. This standard only applies to Operating Security Limits violations. The term Operating Security Limit should be used and defined to distinguish it from the multitude of system operating limits that are routinely used in everyday operation.</p> <p>Throughout the standard replace the term Reliability Authority with Reliability Coordinator.</p> <p>Throughout the standard replace the term 'system operating limit' with Operating Security Limit. Write a definition of Operating Security Limit.</p>
<p>Terminology is critical. The term Reliability Authority is a term that is used in the Functional Model and is</p>	

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<p>meant to reference that entity that provides the functions assigned to the RA under the Reliability Standards process.</p> <p>Reliability Coordinator is a term for a specific existing organization structure and is referenced in existing Operating Policies. Since all new Reliability Standards are being written for functions in the Functional Model, and since the term, Reliability Coordinator is not used in the Functional Model, the term “Reliability Coordinator” will not be used in NERC’s new Reliability Standards. The RA in the Functional Model is more clearly defined than the RC in existing Operating Policies.</p> <p>The DT met with representatives of both the OLDTF and the Facilities Rating Standards DT and agreed to adopt the term Interconnection Reliability Operating Limit (IROL). The definition of an IROL is: A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to <math>T_v</math>. Note that <math>T_v</math> may be zero.</p>	
<p>Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 David Kiguel Hydro One #1</p>	<p>Yes</p> <p>We are questioning whether voltage collapse reqts. should be acknowledged.</p> <p>Confidentiality issues could be addressed</p>
<p>The system operating limits addressed in this standard are those limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. If voltage collapse limits would cause uncontrolled separation that impacted the reliability of the bulk transmission system, then it would be an IROL.</p> <p>The Certification Requirements for the RA are expected to address confidentiality agreements.</p>	
<p>Gregory Campoli NY ISO #2</p>	<p>It is difficult to assess what additional requirements should be captured in this standard without a full compliment of standards to review.</p> <p>Our overall concern is that this that a) requirements for real time analysis and operational analysis need to be defined independently, b) requirements for real time data and modeling data need to be defined independently and c) levels compliance should only be determined once the requirement has been well defined and agreed to.</p>
<p>The system operating limits addressed in this standard are those limits that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. In the revised standard these are called interconnection reliability operating limits or IROLs.</p> <p>The revised standard does separate requirements for operational planning analysis and real-time assessments. Each has its own frequency requirement – the operational planning analysis must be conducted at least once each day – and the real-time assessment must be conducted at least once every 30 minutes.</p> <p>The new standards process is designed to consider the compliance elements in concert with the requirements – the goal is to ensure that the details of the levels of non-compliance have some reasonable links to the requirement and measures.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>Yes</p> <p>This standard needs to discuss a process or point to a process by which all of the operational planning studies (the 'seasonal base case data') and 'mitigation plans' (our operating procedures) are developed, reviewed, discussed and agreed upon. This is a very big gap in this standard.</p>
<p>This standard deals with operating to limits. The issue of how limits are created is defined by the Facility Ratings standard.</p> <p>This standard only addresses the short-term operational planning analyses that are conducted to look at</p>	



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<p>the day ahead to see if the RA's area can be operated without exceeding any IROLs.</p>	
<p>Charles Yeung Reliant Energy #6</p>	<p>Yes</p> <p>As stated in comments to Question #32, there must be coordination between the reliability mitigation procedures and business procedures for congestion management.</p> <p>Coordination requirements with business standards for congestion management.</p>
<p>The current trend of this standard is that the coordination of procedures is left by default to the Reliability Authority. The entity that serves as the RA must meet the NERC standard to keep the transmission system running. It must use whatever business procedures that it needs to meet the NERC standard – but NERC will not specify which business procedures must be used.</p>	
<p>Bob Burkard NCMPA1 # 3,4,5</p>	<p>Other than the comments above</p>
<p>Alan Boesch NPPD #1</p>	<p>Yes</p> <p>The Standard does not require the RA or TOP to provide evidence that they have the authority to take necessary actions. This requirement is currently included in the Certification SARs.</p> <p>This Standard should reference the Certification Standard and any other applicable Standards.</p>
<p>The authorities issue should be handled by the Certification Standards. The references will be updated.</p>	

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**46. Which form of the Standard do you prefer?**

**Summary Consideration:**

There were many commenters that liked each version. For the revised standard, there are fewer requirements, and similar requirements have been grouped together.

Ed Stein Firstenergy Sol #6	A It will be easier to modify the standards if each requirement is in a stand alone item.
Ray Morella FirstEnergy #1	A It will be easier to modify the standards if each requirement is a stand alone item.
Joanne Borrell FirstEnergy Sol #3	A It will be easier to modify the standards if each requirement is a stand alone item.
Alan Boesch NPPD #1	A Version A is very clear easy to follow. Version B is harder to follow and relate the Measurement, Outcomes,etc for the particular requirement. This is reflected in this response form because it requests that Version A be used to provide the response. Please note that version B has two 201 (f) sections and no 202 (f) section.
ECAR Ops Panel #1 – 8 #5 – 1 #2 - 2	A It will be easier to modify the standards if each requirement is a stand alone item There was not complete agreement on this item. Eight companies preferred Version A - Each Requirement Separate. Two companies preferred Version B - Related Requirements Combined.
Alan Johnson Mirant #6	A Version A makes it easier to cite specific measures and/or requirements. However, by simply adding some numbered sub-bullets, the same could be said for Version B.
Alan Boesch NPPD #1	A Version A is very clear and easy to understand the Requirement, Measurement, Outcomes, etc for the particular requirement.
Doug Hils Cinergy #1 John Blazekovich Exelon #1,3,5,6 James Stanton Calpine #5 Tony Jankowski We-Energies #4 Tom Petrich (5) PG&E #1 Stuart Goza TVA #1 Roger Green Southern Co #5 Mike Miller Southern Co #1 Kathleen Goodman ISO NE #2	A
Darrel Richardson Illinois Power #1, 3	We really do not have a preference. We can operate with either form.
Compliance Sub Compliance Mgrs	The structure where the requirements are posed on TOP that are mirrors of RA functions are not appropriate because the RA is responsible. Should not be parallel authorities. Delegation will be dealt with another forum. Version B is not required. (This is not consistent among the commenters. Some prefer version

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	B.
OLDTF (9?) 6 - #2 1 - #1,5	Neither version provides a completely orderly and logical flow. That being said, if there is a requirement to pick one over the other, Version B is much more preferable. (follows a more logical flow of the two). Requirements are not buried like requirements 10 / 11 / 12 in version "A".
FRCC 6-#1, 4-#2, 1-#2	B It is much easier to understand when related items are together. Version B is more clearly written and easier to follow.
Peter Burke ATC #1	B Version B is shorter
Lloyd Linke MAPP #2	B I think version B is written more clearly than version A and is easier to follow. I think that the entities that are responsible for complying to this standard will find it easier to determine what is required of them for compliance. I also think that the levels of Non-Compliance are spelled out more clearly, there is less room for interpretation.
cJoseph Buch Madison #4	B Version B collects all the requirements for each entity in one location. Version A is could result in an entity accidentally overlooking a requirement since they have several sections in which to look.
Joe Minkstein PG&E #5	B Version A is streamline and forthright, but version B lays out the requirements in such fashion that an auditee should know what the documentation requirements are and have agreement with an auditor when a finding of non-compliance is reported
Kim Warren IMO #2	B I prefer that the Standard have all RA requirements/information together. Same for TOP's, TOW's, BA's, IA's and Generator Owners. In other words a different section of the standard for each of the different authorities/owners where all their requirements are stated in one place.
Toni Timberman BPA #1	B Liked Version B because it lays out separately the requirements for each entity, but the compliance information should be associated with each requirement rather than in the big list at the bottom. It is difficult to sort out which compliance refers to which requirement.
Todd Lucas (6?) Southern Co #1	B An adequate review of any of the standards requires a significant effort. A 30 day comment period does not allow for appropriate review and well thought out feedback.
Susan Morris SERC #2 Thomas Pruitt Duke #1 Robert Reed TS (See List)	B Version B is written more clearly than Version A and is easier to follow. Entities that are responsible for complying with this standard will find it easier to determine what is required of them for compliance. In addition, the levels of non-compliance are spelled out more clearly; there is less room for interpretation.
Raj Rana AEP #1,3,5,6	B We prefer neither of the versions. Neither version allows the reader to easily know what each Authority or entity is responsible for. Version B comes the

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	closest.
William Smith Allegheny Pwr #1 Vern Colbert Dominion #1 Sam Jones ERCOT #2 Roman Carter So Co Gen 3,5,6 (6 members) Richard Schwarz PNSC #2 Richard Kafka Pepco #1 Ken Skroback AL Elec Coop #4 Karl Kohlrus CWL&P #5 Guy Zito (See List) NPCC #2 – 2 NPCC #1 – 5 Gregory Campoli NY ISO #2 Gerald Rheault Manitoba #1,3,5,6 Francis Halpin BPA Bus Line #5,6 Dilip Mahendra SMUD #1 David Kiguel Hydro One #1 Albert M. DiCaprio MAAC #2	B
Ed Riley CA ISO #2	The CAISO would like to suggest a third option for the organization of the Standard, dividing the requirements up by function, such as Reliability Authority, Transmission Operator, etc., rather than by task.

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**47. If you have comments on the format of the standard, please share them with us.**

FRCC 6-#1, 4-#2, 1-#2	All assumptions and definitions should be included in the standard.
The standard format does not include assumptions or definitions. The definitions that receive industry support (through the public comment period) will be added to a new glossary used for all reliability standards.	
OLDTF (9?) 6 - #2 1 - #1,5	Building upon comments above, no entities should have to search through a number of Compliance templates to find all of the requirements applicable to them. Version B still has this in that 207 remains buried after TOP requirements.
Eventually the standards will be entered into a relational database that is accessible to the public. Any entity will be able to request a report on all of the requirements applicable to a Function. Several different sequences have been proposed – sequence the requirements so that they follow a logical sequence, sequence the requirements so that all of the requirements for one function are addressed before requirements for other functions – sequence the requirements so the most critical requirement is first, etc. Each of these suggestions has merits.	
William Smith Allegheny Pwr #1	Add descriptive titles to the subsections for ease of reading.
This revision has been adopted and is reflected in the revised standard.	
Guy Zito (See List) NPCC #2 – 2 NPCC #1 - 5	Subtitles should be added to sectionalize the standard and a table of contents added.
This revision has been adopted and is reflected in the revised standard.	
Toni Timberman BPA #1	highlighting the requirements better and using tabs and font sizes to delineate between the different sections could improve format.
The revised standard does use more highlighting, but the use of different font sizes has not been adopted.	
Thomas Pruitt Duke #1	<ol style="list-style-type: none"> <li>1) Subtitles should be added to sectionalize the standard and a table of contents added.</li> <li>2) Since all references to functions, such as, RA, BA, PA, TOP, etc. are listed in standards documents as "entities" for convenience, all NERC standards documents should contain a clarification statement explaining that the functions are not organizations and that all references to the functions should be interpreted as "entities responsible for --- function".</li> <li>3) All assumptions should be listed in the standards document.</li> <li>4) Footnotes of definitions should be repeated for each requirement write-up.</li> <li>5) There should always be at least two levels of non-compliance defined.</li> </ol>

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<p>Subtitles were added.</p> <p>During the transition period when we are still developing new standards and the existing operating policies haven't been retired, we will add a paragraph to the beginning of each standard to clarify that the functions are not the same as entities.</p> <p>The standard format doesn't include an assumptions section.</p> <p>Definitions are being presented at the beginning of each standard and won't be included in footnotes.</p> <p>There is no requirement to have more than one level of non-compliance. These standards are not written as prescriptively as the existing Operating Policies and Planning Standards. Many of the new standards address areas of performance that are critical to reliability, and giving partial credit to an entity that fails to meet the performance objective may be detrimental to reliability. We encourage you to read the background information provided by the SDT with the comment form for the revised standard. If you still feel that additional levels of non-compliance are needed, please note this on the comment form.</p>	
<p>Roger Green Southern Co #5</p>	<p>You are encouraged to make them as simple as possible. Organization and means to find content needs to be very clear. Realizing that these are very complex, perhaps they need to be followed up with summaries by function or subject, such as Compliance Requirements, Planning Requirements, Operating Requirements, etc.</p>
<p>Once the standards are developed, they will be available to the industry in a user-friendly relational database. You will be able to ask for a report that lists all the requirements for an RA, all the measures for a BA, etc. Several different types of reports should be available to produce the type of summaries you've suggested.</p>	
<p>Compliance Mgrs Compliance Sub Robert Reed TS (See List)  Susan Morris SERC #2</p>	<ol style="list-style-type: none"> <li>1) Subtitles should be added to sectionalize the standard and a table of contents added.</li> <li>2) Jim Byrd presented Functional model issues to the NERC PC/OC/MIC on March 19, 2003 in Birmingham and stated that one of the major issues with the Functional model is that the functions are perceived to be organizations. Jim stated that efforts will be made to clarify that the functions are not organizations. Since all references to functions, such as, RA, BA, PA, TOP, etc. are listed in standards documents as "entities" for convenience; for example, sentences begin: "The RA shall..." instead of "Entities responsible for RA functions shall...", then all NERC standards documents should contain a clarification statement explaining that the functions are not organizations and that all references to the functions should be interpreted as "entities responsible for --- function".</li> <li>3) All assumptions should be listed in the standards document.</li> <li>4) Footnotes of definitions should be repeated for each requirement write-up.</li> <li>5) There should always be at least two levels of non-compliance defined.</li> </ol>
<p>Subtitles were added.</p> <p>During the transition period when we are still developing new standards and the existing operating policies haven't been retired, we will add a paragraph to the beginning of each standard to clarify that the functions are not the same as entities.</p> <p>The standard format doesn't include an assumptions section.</p> <p>Definitions are being presented at the beginning of each standard and won't be included in footnotes.</p> <p>There is no requirement to have more than one level of non-compliance. These standards are not written as prescriptively as the existing Operating Policies and Planning Standards. Many of the new standards address areas of performance that are critical to reliability, and giving partial credit to an entity that fails to meet the performance objective may be detrimental to reliability. We encourage you to read the background information provided by the SDT with the comment form for the revised standard. If you still feel that additional levels of non-compliance are needed, please note this on the comment form.</p>	

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Raj Rana AEP #1,3,5,6	As one reviewer stated, "this draft standard is worse then reading the Federal Register."
Peter Burke ATC #1	<p>While it seems repetitive there is no other way to better mirror the NERC Functional Model.</p> <p>Although version B is clearer than version A, version B might be better if altered so that the requirements for each type of entity are grouped. That is, all the requirements for the RA should be in one section so that the RA need not search the entire document for any remaining requirements that apply to them. Obviously, this would apply to all types of entities, IA, BA, Generator, TOW and TOP so they one have to look in one place.</p>
<p>Several different sequences have been proposed – sequence the requirements so that they follow a logical sequence, sequence the requirements so that all of the requirements for one function are addressed before requirements for other functions – sequence the requirements so the most critical requirement is first, etc. Each of these suggestions has merits.</p> <p>Once the standards are developed, they will be available to the industry in a user-friendly relational database. You will be able to ask for a report that lists all the requirements for an RA, all the measures for a BA, etc. Several different types of reports should be available to make it easy for users to find the requirements and measures applicable to each function.</p>	
Lloyd Linke MAPP #2	<p>The Outcome section should have 100% Compliance Requirement added to it. 100% Compliance is identified in the Comment document but not in the standard itself. I think this should be added throughout the document.</p> <p>Section 204(e) is incorrectly numbered as 203(e) (Version B)</p> <p>Section 204 (e) and (f) are mislabeled 205(e) and (f) (Version A)</p> <p>Section 202(f) is mislabeled as 201(f) (Version B)</p> <p>The Compliance Monitoring sections are not evaluated above - this comment applies to them: In the Compliance Monitoring Process section it states that the entity responsible for complying shall have the following data available upon request of the Compliance Monitor; it does not state the time period within which the entity must respond. I think that a specific time requirement in which the information shall be provided needs be added. Adding the specific time to provide the information makes the requirement more measurable. This is true for Sections 201 - 206.</p>
<p>The Outcomes section was deleted from all standards because it was redundant with the requirements and measures.</p> <p>The typos have been corrected in the revised standard.</p> <p>Under the Compliance Monitoring Section – the current practice is for the compliance monitor to review each entity once every three years during a scheduled audit. The expectation was that the data listed needs to be shown to the compliance monitor during that scheduled audit. If performance were such that the compliance monitor felt a 'triggered investigation' were warranted, the compliance monitor could also ask to see the documentation as part of that investigation.</p>	
Kathleen Goodman ISO NE #2	<p>Additional comments: ISO New England, nor NPCC members, subscribe to the use of monetary penalties to enforce compliance and we (ISO New England) in no way are a party to any contracts which allows NERC to do so.</p>
<p>The sanctions applied for levels of non-compliance are established by the Compliance Enforcement Program and are outside the scope of the SDT.</p>	
Karl Kohlrus CWL&P #5	<p>The organization of the document makes it very difficult to read. Much of the data is similar and repetitive. Maybe the document should be organized differently, either separate standards applicable to RA only, the IA only, the BA only, and the TOP only. Then each entity would have to read and comply only with the standard that is applicable to him. An alternative method would be to state in each section that this is applicable to RA, IA, BA or TOP.</p>

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Once the standards are developed, they will be available to the industry in a user-friendly relational database. You will be able to ask for a report that lists all the requirements for an RA, all the measures for a BA, etc. Several different types of reports should be available to produce the type of summaries you've suggested.

Several different sequences have been proposed – sequence the requirements so that they follow a logical sequence, sequence the requirements so that all of the requirements for one function are addressed before requirements for other functions – sequence the requirements so the most critical requirement is first, etc. Each of these suggestions has merits.

Joseph Buch  
Madison #4

Other standards organizations include a table of contents as part of the standard. This standard should also include a table of contents.

In section 201 (a) Requirement, each item should be identified by a number and this number should be correlated with the other subsections of 201. For example, the first requirement (a) covers monitoring and under (b) Measures the monitoring requirements should all be grouped together and Similarly, the second item under requirements (a) data collection and specification should be listed as item two under (b) Measures. [In this draft it is number three] This format should be continued for subsections (c), (d), (e), (f) and (g). Note that under (d) Regional Differences the same comment could apply to all the requirements.

The fourth item in Section 201 (a) covers notification of the Compliance Monitor when data is not provided. In the long form of this standard, this item is included as part of the data specification and collection. This item should be combined with the second item in this section. Similarly, the third item should be combined with the second item.

Version B combines most of the RA requirements in Section 201, however the requirements for a mitigation plan and for documentation of instances of exceeding limits are still in separate sections 203 and 205. For consistency in combining all RA requirements together sections 203 and 205 should be combined into section 201. This same comment also applies to TOPs.

Sections 208 to 211 cover the responsibilities of Balancing Authorities, Interchange Authorities, Transmission Owners and Generator Owners to supply data covering new facilities or modifications to existing facilities. Sections 207 covers the same requirements for the Reliability Authority to provide data to associated (adjacent) Reliability Authorities and/or Transmission Operators. Although it is beneficial to keep these sections on data together, it is not consistent with the goal of keeping all the requirements for each entity together in one section.

This standard requires generator owners to supply data as requested to the requesting RA or TOP no less than 7 days prior to energization of new facilities or changes to existing facilities with a level 4 non-compliance if this data is not provided. This is not acceptable. The standard does not spell out the data required, it is left up to the RA or TOP to determine. Some data such as winter ratings is not crucial to system operation and associated level 4 non-compliance along with the sanctions for this level of non-compliance is simply not appropriate. What may be acceptable is to classify non-compliance with this standard as written as level 1. A future revision to this standard including an itemized listing of the specified data could then be developed along with appropriate levels of non-compliance. For example, generator data for dynamic stability provided between 5 and 7 days before energization could be given a level 1 non-compliance.

I also noted several typo's in the section numbers.



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<p>Subtitles were added to the individual requirements, and the list of subtitles was added to the front of the revised standard as a type of table of contents.</p> <p>Suggestions for changing the numbering sequence will be forwarded to NERC’s VP and General Counsel for consideration. He has the final say on the format of these new standards.</p> <p>The level of detail requested for the requirement that the Generator provide Data has not been supported in the revised standard. The revised standard states more clearly that the data that must be provided to the RA is needed to monitor and assess the system relative to the subset of system operating limits called Interconnection Reliability Operating Limits or IROLs. Each RA must identify what data it needs and must provide a data specification to generators. Since each RA may have different data needs, this standard will not include a specific list of data.</p> <p>The typos should not be present in the revised standard.</p>	
<p>ECAR Ops Panel #1 – 8 #5 – 1 #2 - 2</p>	<p>(1) The application of the Sanctions table is difficult to understand. A few examples on how to apply sanctions would be helpful. (2) Add descriptive titles to the subsections.</p>
<p>We will ask the Director-Compliance to develop an explanation of the application of the Sanctions Table that is publicly posted.</p> <p>Each requirement has been given a ‘subtitle’ in the revised standard.</p>	
<p>Francis Halpin BPA Bus Line #5,6</p>	<p>It seems to be too long! The drafting team should look to consolidate where ever possible. Requirements 5, 6, 7, 8, &amp; 9 seem to be prime candidates for incorporation into a single requirement which is applicable to the different entities.</p>
<p>As you suggested, all of the requirements related to providing data were consolidated.</p>	
<p>Ed Stein Firstenergy Sol #6</p>	<p>I believe that NERC has taken the old hardware/software problem and increased it exponentially. There is a computer problem; hardware blames software and software blames hardware. It appears that NERC has set up the condition where there will be finger pointing between the IA,RA, BA,and TO. Because of this potential it is very important to get this correct before it goes to drafting committee.</p> <p>Another concern that I have is that the whole RTO/SAR process has taken away the common sense factor. As an example: The temperature is 30 degrees below zero and the wind speed is 20 miles per hour. The associated high loads has caused the transmission lines into the area to become overloaded based on an operating limit developed at zero degrees and a wind speed of 10 miles per hour. The only solution is to reduced load in the area through rotating the opening of distribution breakers throughout the area. The problem is that once a distribution breaker is opened there is a good chance that it will not close when called upon due to the cold weather. The RA or TO or whatever does not call for load reductions due to exceeding the operating limit, serves the load with no problem because the true limits are higher than the reported limits or a small amount of loss of life is taken out of the lines. My fear is that because a limit has been violated the TO or RA will be placed on the NERC rack and tortured. Once that happens the next time you will see load shedding causing even more problems.</p> <p>I do support ECAR's responses and much of PJM's responses.</p> <p>After reviewing all of this TO, IA, BA, and RA I am heading to AA because I really want a drink.</p>

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**48. Please list any other comments you may have in the space below.**

<p>Toni Timberman BPA #1</p>	<p>there were content differences in addition to format differences between Version A and Version B. These differences should be resolved. I will use Version B as the reference:</p> <ol style="list-style-type: none"> <li>1. Page 1 of 19, footnote 1 – data can be analog or digital</li> <li>2. Page 2 of 19, 201(b) 6. does not appear in Version A. “Reliability Analysis Programs analyze all system operating limits.....</li> <li>3. Page 3 of 19, 201(e), third mark – the language “and identifies any problems...” Does not appear in Version A</li> <li>4. Page 3 of 19, 201(e), 6th mark does not appear in Version A. “Reliability analysis programs analyze all system operating limits</li> <li>5. Page 3 of 19, 201(f) 3, second mark is not in Version A “No analysis tool was available for use...”</li> <li>6. Page 3 of 19, 201(f) 3, fourth mark is not in version A “there was a system operating limit violation, but...”</li> <li>7. Page 5 of 19, 202(b) #6, is not in Version A</li> <li>8. footnote at bottom of page 5 should include operator assessment as part of the definition of Reliability Analyses</li> <li>9. Page 7 of 19, 201(f)3, second mark is not in version A “no analysis tool was available”</li> <li>10. Page 8 of 19, 203(a) : words “approved, documented” were not in Version A</li> <li>11. Page 8 of 19, 203(b) language is different than in Version A</li> <li>12. Page 9 of 19, 204(a) word “approved ” was not in Version A</li> <li>13. Page 9 of 19, 204(b) shoul reference TOP instead of RA</li> <li>14. Page 10 of 19, 205(a) Requirement is written much differently than in Version A</li> <li>15. Page 10 of 19, 205(b) Version A uses better language for the Measures</li> <li>16. page 11 of 19, 205(f)4, second mark – does not exist in Version A</li> </ol> <p>General comment: please get rid of the “marks” and make every item clearly identifiable with a number or letter reference.</p> <p>That’s all for this round of comments....</p>
<p>Since we asked everyone to comment on the more detailed version, we’ve made adjustments to the standard from that version. The revised standard has just one version, and this should eliminate the inconsistencies you noted in the original draft.</p> <p>In the revised standard, each individual item has been independently numbered except in cases where a list of items must be considered together as a single item.</p>	
<p>Raj Rana AEP #1,3,5,6</p>	<p>Obviously, we believe this draft is not yet ready for going to ballot. Of course, that wasn't your intent at this point. However, we question the wisdom of this standard ever going to ballot before the Facilities Rating Standard is also developed and ready to go to ballot. We would suggest that this standard should be developed the Facility Rating Standard. Otherwise assumptions regarding limits and violations made by this standard may turn out to be vastly different then the intent of the Facility Ratings Standard.</p> <p>We appreciate the hard work of the standards drafting team and look forward to the next draft.</p>

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<p>Your recommendations were very much appreciated! The Facility Ratings SAR was approved, so now we do have a definition of system operating limit to use as a starting point for this standard. The Facility Ratings Standard will establish how system operation limits must be set. The Facility Ratings SAR did not include a definition of the subset of system operating limits addressed in this standard, so this revised standard includes a new term (interconnection reliability operating limit) and its definition. This standard addresses operating within IROLs so that instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.</p>	
<p>Doug Hils Cinergy #1</p>	<p>202 (a) Requirement section. Under "The TOP shall:" the fifth bullet needs to be removed or reworded. If the bullet is not removed, a suggested wording would be: Operate within equipment ratings or system operating limits determined by the Reliability Authorities' short-term reliability analysis. (The wording change needs to reflect the fact that the TOP may not have the information that would be needed from other utilities to perform an effective bulk transmission analysis. The Reliability Authority should have the information to do such an analysis and provide the TOP with any limits.)</p> <p>Wording in 202 (b) Measures, 202 (c) Outcomes, and 202 (e) Compliance Monitoring Process and 202 (f) Levels of Non-compliance may need minor changes to reflect the change in the 202 (a) Requirement section.</p>
<p>Based on the comments submitted and a review of the Functional Model, the referenced requirement was dropped from this standard.</p>	
<p>Dilip Mahendra SMUD #1</p>	<p>Sanctions should be applied only if a regulatory body governing the entity in non-compliance endorses the sanctions table.</p>
<p>The sanctions table is expected to be endorsed by the NERC Board of Trustees and to be an integral part of the Compliance Enforcement Program. NERC is still hopeful that federal legislation will be passed to give NERC or its successor organization the right to apply penalties for non-compliance with standards.</p>	
<p>David Kiguel Hydro One #1</p>	<p>Subtitles should be added to sectionalize the standard and a table of contents added.</p>
<p>This suggestion was adopted and is reflected in the revised standard.</p>	

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<p>Compliance Managers (14?)</p>	<p><u>Simplify the Standard</u></p> <p>There is a fairly consistent theme across the comments that the draft OWL Standard should be simplified and clarified. The standard is focusing too much on data reporting, documentation, tools, etc. and is missing the key point to get operators to take appropriate actions in the right time frame to address OSL violations.</p> <p>The OWL standard should focus on the monitoring of transmission system data and status and Operating Security Limits, to prevent Operating Security Limit violations, mitigate violations within specific time frames when they occur, and report such violations to NERC.</p> <p><u>Operating Security Limits</u></p> <p>There are several comments that propose that the definition of an Operating System Limit (OSL) is too narrow. A “System Operating Limit is a limit that has been “identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.”</p> <p>“As conceived, this standard does not result in any entity assuring that bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby require monitoring and adherence, should be covered by this standard.”</p> <p><u>Proposal</u></p> <p>The Transmission System elements that have “established limits” to comply with the Disturbance Performance Table should be included in the OSL monitoring list.</p> <p><u>Violations</u></p> <p>The sanction measures in the draft standard are too focused on reporting and documentation, and rather should focus on OSL violations (violation meaning the limit has been exceeded by both a magnitude and time duration specification).</p> <p>The levels of noncompliance as stated in the draft standard will be very difficult to measure, and should be replaced with measurable requirements that are practical to administer and that achieve desired results.</p> <p><u>Reporting</u></p> <p>There is a suggestion that there needs to be some definition of what should be “reportable” and that perhaps all incidents of OSL violations may not have to be reported.</p>
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This standard must contain all of the elements listed in its associated SAR. For reference the following is from the approved SAR:

*Requirements shall address:*

- *Real time monitoring of system parameters against operating limits*
  - ***Monitor parameters that indicate the current state of the transmission system***
  - ***Monitor parameters that indicate the current state of tie lines to other systems and of the overall interconnected transmission system***
- *Performing short-term and real-time transmission reliability analyses relative to the identified operating limits*
  - ***Collect data needed for performing real time reliability analyses***
  - ***Conduct an operating assessment to identify limiting facilities***
- *Performing corrective actions to mitigate exceeding operating limits*
  - ***Have a documented mitigation plan***
  - ***Implement mitigation plan where necessary***
- *Keeping records and filing reports*
  - ***Document instances of exceeding identified operating limits***
  - *Log violations and maintain records for the retention period*
  - *Report information to NERC based on specified criteria (e.g. magnitude, duration, type of violation, instances of exceeding limits<sup>1</sup>)*

The scope of this standard must conform to the purpose of this standard, which was also set with its associated SAR. For reference, the following is from the approved SAR:

*The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.*

The first draft of this SAR tried to indicate that this standard does not address all system operating limits, just the subset of system operating limits that, if exceeded, could cause instability, uncontrolled . . . . When the first draft was posted, the Facility Ratings SAR wasn't approved, and this SDT didn't know if the Facility Ratings SAR would include a term for the subset of system operating limits addressed by this standard. Since then, the Facility Ratings SAR has been approved, and there was no new definition for the subset of system operating limits addressed in this standard. This revised standard includes a new term, 'interconnection reliability operating limit' or IROL .

Several commenters indicated as you did that the scope of this standard should be expanded to address all system operating limits. The SDT is not authorized to expand the scope of the standard so it addresses topics that are outside the scope of the associated SAR. The SDT has notified the Director-Standards that there may be a need for another industry standard that addresses the subset of system operating limits that are not addressed in this standard.

There were many suggestions for modifying the levels of non-compliance so they focus more on real time performance and less on after the fact documents and these changes were implemented and are reflected in the revised standard.

The revised standard clarifies which instances of exceeding an IROL must be documented and which must be both documented and reported.

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These definitions will be posted and balloted along with the standard, but will not be restated in the standard. Instead, they will be included in a separate “Definitions” section containing definitions relevant to all standards that NERC develops.

## **DEFINITIONS**

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk transmission system.

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

**Documentable Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for any length of time.

**Generator Owner:** The entity that owns the generator.

**Instability:** The inability of the transmission system to maintain a state of equilibrium during normal and abnormal system conditions or disturbances.

**Interconnection Reliability Operating Limit:** A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to  $T_v$ . Note that  $T_v$  may be zero.

**Interconnection Reliability Operating Limit Event:** An instance of exceeding an interconnection reliability operating limit for any length of time.

**Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ .

**Real-time Monitoring:** To use vision and hearing to scan various real-time data sources and draw conclusions about what the data indicates. Having the ability to scan real time data as conditions dictate.

**Occurrence period (Performance-reset Period):** The time period in which performance is measured, evaluated, and then reset.

**Operational Planning Analysis:** An analysis of the expected system conditions, given the peak load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions.

**Real-time:** Immediate time as opposed to future time.

**Real-time Assessment:** An evaluation conducted by collecting and reviewing immediately available data to determine the status of the electric system. The reliability authority uses real-time data to conduct its real-time assessment.

**Real-time Data:** Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values – may include directly monitored data, Inter-

## **Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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utility data exchange (e.g., Interconnection Control Area Communication Protocol and or SCADA Data), and manually collected data.

**Reliability Authority Area:** A defined electrical system bounded by interconnection (tie-line) metering and telemetry under the control of a single reliability authority.

**Reportable Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for time greater than or equal to the interconnection reliability operating limit's  $T_v$ .

**Self-certification:** A process whereby an entity submits a form to its compliance monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard.

Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed on an annual basis although they may be required more often

$T_v$ : The violation time associated with a limit.

**Transmission Operator:** The entity that provides transmission services to qualified market participants under applicable transmission service agreements.

**Uncontrolled Separation:** The unplanned break-up of an interconnection, or portion of an interconnection, that is not the result of automatic action by a special protection system or remedial action scheme operating correctly.



## 200 – OPERATE WITHIN INTERCONNECTION RELIABILITY OPERATING LIMITS

201	Interconnection Reliability Operating Limit Identification
202	Monitoring
203	Analyses and Assessments
204	Actions
205	Data Specification & Collection
206	Data Provision
207	Action Plan
208	Reliability Authority Directives

1. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.
2. **Effective Period:** This standard will become effective on the first day of the month following the month that the NERC Board of Trustees adopts the standard.
3. **Applicability:** These requirements apply to entities performing various electric system functions, as defined in the functional model approved by the NERC Board of Trustees in June 2001. NERC is now developing standards and procedures for the identification and certification of such entities. Until that identification and certification is complete, these standard apply to the existing entities (such as control areas, transmission owners and operators, and generation owners) that are currently performing the defined functions.

In this standard, the terms, *balancing authority, generator operator, generator owner, interchange authority, planning authority, reliability authority, transmission operator, transmission owner* refer to the entities performing these functions as defined in the functional model.

**201 IROL Identification**

**1. Requirements**

- 1.1. The reliability authority and planning authority shall identify and document which facilities (or groups of facilities) in the reliability authority’s reliability area are subject to interconnection reliability operating limits.
- 1.2. The reliability authority and planning authority shall identify each interconnection reliability operating limit within the reliability authority’s reliability area.
  - 1.2.1. The reliability authority or planning authority shall identify a maximum response time ( $T_v$ ) for any interconnection reliability operating limit that does not already have a  $T_v$ .

**2. Measures**

- 2.1. The entity responsible shall establish a list of interconnection reliability operating limits for the reliability authority’s reliability area.
  - 2.1.1. The entity responsible shall establish a maximum response time ( $T_v$ ) for any interconnection reliability operating limit that does not already have a  $T_v$ .
- 2.2. The entity responsible shall establish a list of facilities (or groups of facilities) in the reliability authority’s reliability area that are subject to interconnection reliability operating limits

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The entity responsible shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The performance-reset period shall be one calendar year. The entity responsible shall keep data on limits for three calendar years. The compliance monitor shall keep audited data for three calendar years.
- 4.3. The entity responsible shall have the following available upon the request of its compliance monitor:
  - 4.3.1. List of interconnection reliability operating limits for the reliability authority’s reliability area
  - 4.3.2. List of facilities (or groups of facilities) in the reliability authority’s reliability area that are subject to interconnection reliability operating limits

**5. Levels of Non-compliance**

- 5.1. Level one: Not applicable
- 5.2. Level two: Not applicable
- 5.3. Level three: Not applicable

## **Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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- 5.4. Level four: No list of interconnection reliability operating limits or no list of facilities subject to interconnection reliability operating limits for the reliability authority's reliability area.
- 6. Sanctions**
  - 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. (Attached at the end of this draft standard for reference and comment.)

**202 Monitoring**

**1. Requirements**

- 1.1. The reliability authority shall monitor real-time system operating parameters to determine if it is operating its reliability area within its interconnection reliability operating limits.

**2. Measures**

- 2.1. The reliability authority shall have interconnection reliability operating limits available for its operations personnel’s real-time use.
- 2.2. The reliability authority shall have real-time data available in a form that system operators can compare to the interconnection reliability operating limits.
- 2.3. The reliability authority shall monitor system operating parameters and compare these against its interconnection reliability operating limits.

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The reliability authority shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The performance-reset period shall be one calendar year. The reliability authority shall keep data on limits for three calendar years. The compliance monitor shall keep audited data for three calendar years.
- 4.3. The reliability authority shall have the following available upon the request of the compliance monitor:
  - 4.3.1. Display(s) with real time data associated with interconnection reliability operating limits

**5. Levels of Non-compliance**

- 5.1. Level one: Not applicable
- 5.2. Level two: Not applicable
- 5.3. Level three: Not applicable
- 5.4. Level four: A level four non-compliance occurs if any of the following conditions are present:
  - 5.4.1. Interconnection reliability operating limits not available to operations personnel for real time use; or
  - 5.4.2. Real-time data not available in a form that can be compared to the interconnection reliability operating limits; or
  - 5.4.3. System operating parameters not monitored and compared against interconnection reliability operating limits.

**6. Sanctions**

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- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix.  
*(Attached at the end of this draft standard for reference and comment.)*

**203 Analyses and Assessments**

**1. Requirements**

- 1.1. The reliability authority shall perform operational planning analyses to verify that its planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.
- 1.2. The reliability authority shall perform real-time assessments to verify that it is not exceeding any interconnection reliability operating limits.

**2. Measures**

- 2.1. The reliability authority shall identify operating situations or events that impact its ability to operate its reliability area without exceeding any identified interconnection reliability operating limits.
  - 2.1.1. The reliability authority shall conduct an operational planning analysis at least once each day, evaluating the next day's projected system operating conditions.
  - 2.1.2. The reliability authority shall conduct a real-time assessment periodically, but at least once every 30 minutes.

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The reliability authority shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years and investigations upon complaint, to assess performance.
- 4.2. The performance-reset period shall be one day. The compliance monitor shall keep audited data for three calendar years.
- 4.3. The reliability authority shall demonstrate the following upon the request of the compliance monitor:
  - 4.3.1. Ability to perform an operational planning analysis
  - 4.3.2. Ability to perform a real time assessment

**5. Levels of Non-compliance – Penalties Shall be Applied Separately**

**Operational Planning Analysis**

- 5.1. Level one: Not applicable
- 5.2. Level two: Not applicable
- 5.3. Level three: Not applicable
- 5.4. Level four: Operational planning analysis was not conducted at least once each day

**Real Time Assessment**

- 5.5. Level one: Not applicable
- 5.6. Level two: Not applicable

## **Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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- 5.7. Level three: Not applicable
- 5.8. Level four: Real time assessment was not conducted at least once every 30 minutes
- 6. Sanctions**
  - 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix.  
*(Attached at the end of this draft standard for reference and comment.)*

**204 Actions**

**1. Requirements**

- 1.1. The reliability authority shall act<sup>1</sup> or direct others to act to:
  - 1.1.1. Prevent instances where interconnection reliability operating limits may be exceeded
  - 1.1.2. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded
- 1.2. The reliability authority shall document instances of exceeding interconnection reliability operating limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding interconnection reliability operating limits for time<sup>2</sup> greater than or equal to  $T_v$ .

**2. Measures**

- 2.1. The reliability authority shall document each instance of exceeding an interconnection reliability operating limit:
  - 2.1.1. The reliability authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)
- 2.2. The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ :
  - 2.2.1. The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five business days of the initiation of the event. (The report includes the date and time of the event, identification of which interconnection reliability operating limit was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the interconnection reliability operating limit, actions taken or directives issued, and explanation of results of actions or directives.)

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The reliability authority shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use

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<sup>1</sup> Note that the reliability authority may choose to take 'no overt action' and this may be an acceptable action. Taking 'no overt action' is not the same as ignoring the problem.

<sup>2</sup> For calculating the duration of the event, time is measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the interconnection reliability operating limits for a minimum of 30 seconds.



## **Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

- 4.2. The performance-reset period shall be one calendar year. The reliability authority shall keep Interconnection Reliability Operating Limit Violation Reports, operations logs, or other documentation for three calendar years. The compliance monitor shall keep audited data for three calendar years.
  - 4.3. The reliability authority shall have the following available upon the request of its compliance monitor:
    - 4.3.1. Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an interconnection reliability operating limit and the actions or directives issued for each of these instances
    - 4.3.2. Interconnection Reliability Operating Limit Violation Reports
- 5. Levels of Non-compliance**
- 5.1. Level one: Interconnection reliability operating limit exceeded and no documentation to indicate actions taken or directives issued to mitigate the instance.
  - 5.2. Level two: Not applicable
  - 5.3. Level three: Not applicable
  - 5.4. Level four: Interconnection reliability operating limit exceeded for time greater than or equal to  $T_v$  minutes
- 6. Sanctions**
- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. *(Attached at the end of this draft standard for reference and comment.)*

**205 Data Specification & Collection**

**1. Requirements**

- 1.1. The reliability authority shall specify and collect the data it needs to support real-time monitoring, operational planning analyses and real-time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits. The reliability authority shall collect this data from the entities performing functions that have facilities monitored by the reliability authority, and from entities that provide facility status to the reliability authority. This includes specifying and collecting data from the following:
  - 1.1.1. Generator owners
  - 1.1.2. Generator operators
  - 1.1.3. Reliability authorities
  - 1.1.4. Transmission operators
  - 1.1.5. Transmission owners
- 1.2. The reliability authority shall specify when to supply data (based on its hardware and software requirements, and the time needed to do its operational planning analyses.)
- 1.3. The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority does not provide data as specified.

**2. Measures**

- 2.1. The reliability authority shall have a documented specification for data needed to build and maintain models needed to support real time monitoring, operational planning analyses and real time assessments relative to interconnection reliability operating limits.
  - 2.1.1. Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.
  - 2.1.2. Specification shall address the data provision process to use when automated real-time system operating data is unavailable.
- 2.2. The reliability authority shall distribute its data specification to the entities that have facilities monitored by the reliability authority and to entities that provide facility status to the reliability authority.
- 2.3. The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority, or an entity that provides facility status to the reliability authority, does not provide data as specified.
  - 2.3.1. The notification shall take place within five business days of discovering that the data is missing.

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The reliability authority shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use

## **Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

- 4.2. The performance-reset period shall be one calendar year. The reliability authority shall keep its data specification(s) for three calendar years. The compliance monitor shall keep audited data for three calendar years.
- 4.3. The reliability authority shall have the following available upon the request of the compliance monitor:
  - 4.3.1. Data specification(s)
  - 4.3.2. Proof of distribution of the data specification(s)

### **5. Levels of Non-compliance**

- 5.1. Level one: Data specification incomplete (missing either the list of required data, a mutually agreeable format, a timeframe for providing data, or a data provision process to use when automated real-time system operating data is unavailable.)
- 5.2. Level two: No data specification or the specification not distributed to the entities that have facilities monitored by the reliability authority and the entities that provide the reliability authority with facility status
- 5.3. Level three: Not applicable
- 5.4. Level four: Not applicable

### **6. Sanctions**

- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. *(Attached at the end of this draft standard for reference and comment.)*

**206 Data Provision**

**1. Requirements**

- 1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.
  - 1.1.1. Generator owners
  - 1.1.2. Generator operators
  - 1.1.3. Reliability authorities
  - 1.1.4. Transmission operators
  - 1.1.5. Transmission owners

**2. Measures**

- 2.1. The entity responsible shall provide data, as specified, to the requesting reliability authority, within the time frame specified, in the mutually agreed upon format.

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The entity responsible shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor shall seek confirmation of the data transmission by checking with the receiving reliability authority. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The performance-reset period is 12 months without a violation from the time of the last violation. The responsible entity shall keep data transmittal documentation for three calendar years. The compliance monitor shall keep audited data for three calendar years.
- 4.3. The entity responsible shall have the following available upon the request of the compliance monitor:
  - 4.3.1. Copies of transmittal cover letters indicating data was sent to the reliability authority

**5. Levels of Non-compliance**

- 5.1. Level one: Not applicable
- 5.2. Level two: Not applicable
- 5.3. Level three: Not applicable
- 5.4. Level four: Data not provided to the reliability authority as specified.

**6. Sanctions**

- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. *(Attached at the end of this draft standard for reference and comment.)*

**207 Action Plan**

**1. Requirements**

- 1.1. The reliability authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its interconnection reliability operating limits.

**2. Measures**

- 2.1. The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall be coordinated with those entities responsible for acting and with those entities impacted by such actions.
  - 2.1.1. The action plan may be a process or procedure for preventing or mitigating instances of exceeding interconnected reliability operating limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to prevent and mitigate instances of exceeding interconnected reliability operating limits.)

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The reliability authority shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The performance-reset period is 12 months. The reliability authority shall keep its action plan for three calendar years. The compliance monitor shall keep audit records for three calendar years.
- 4.3. The reliability authority shall make the following available for inspection by the compliance monitor upon request:
  - 4.3.1. Action plan

**5. Levels of Non-compliance**

- 5.1. Level one: Action plan exists but wasn't coordinated with all involved and impacted entities
- 5.2. Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities
- 5.3. Level three: Not applicable.
- 5.4. Level four: No action plan

**6. Sanctions**

- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. *(Attached at the end of this draft standard for reference and comment.)*

**208 Reliability Authority Directives**

**1. Requirements**

- 1.1. The transmission operator, balancing authority and interchange authority shall follow the reliability authority's directives to:
  - 1.1.1.1. Prevent instances where interconnection reliability operating limits may be exceeded
  - 1.1.1.2. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded
- 1.2. The entity responsible shall document the reliability authority's directives and the actions taken

**2. Measures**

- 2.1. The entity responsible shall follow the reliability authority's directives and shall document the directives and actions taken to meet the directives
- 2.2. The entity responsible shall document via an operations log or other data source, the following for each directive it receives relative to an interconnection reliability operating limit:
  - 2.2.1. Date and time of directive received
  - 2.2.2. Directive issued
  - 2.2.3. Actions taken in response to directive

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The entity responsible shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint to assess performance.
- 4.2. The performance-reset period is 12 months. The entity responsible shall keep its documentation for three calendar years. The compliance monitor shall keep audit records for three calendar years.
- 4.3. The entity responsible shall make the following available for inspection by the compliance monitor upon request:
  - 4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:
    - 4.3.1.1. Date and time of each of directive received
    - 4.3.1.2. Directive issued
    - 4.3.1.3. Actions taken in response to directive

**5. Levels of Non-compliance**

## **Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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- 5.1. Level one: Not applicable.
  - 5.2. Level two: Not applicable.
  - 5.3. Level three: Not applicable.
  - 5.4. Level four: Did not follow directives.
- 6. Sanctions**
- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix.  
*(Attached at the end of this draft standard for reference and comment.)*

### **Sanctions Table**

The matrix of compliance sanctions that follows was developed by the NERC Compliance Subcommittee as part of the NERC Compliance Enforcement Program and was approved by the NERC Board of Trustees.

Levels of noncompliance are tied to this matrix. The matrix is divided into four levels of increasing noncompliance vertically and the number of violations in a defined period at a given level horizontally.

Note that there are three sanctions that can be used: a letter, a fixed fine, and a \$/MW fine.

### **Letter**

This sanction is used to notify company executives, Regional officers, and regulators that an entity is non-compliant. The distribution of the letter varies depending on the severity of the noncompliance. The intent of a letter sanction is to bring noncompliance to the attention of those who can influence the actions of an organization so as to become compliant.

- Letter (A) — Letter to the entity’s vice president level or equivalent informing the entity of noncompliance, with copies to the data reporting contact, and the entity’s highest ranking Regional Council representative.
- Letter (B) — Letter to the entity’s chief executive officer or equivalent, with copies to the data reporting contact, the entity’s highest ranking Regional Council representative, and the vice president over the area in which noncompliance occurred.
- Letter (C) — Letter to the entity’s chief executive officer and chairman of the board, with copies to the NERC president, regulatory authorities having jurisdiction over the non-compliant entity (if requested by such regulatory authorities), the data reporting contact, the entity’s highest ranking Regional Council representative, and the vice president over the area in which non-compliance occurred.

### **Fixed Dollars**

This sanction is to be used when a letter sanction is not sufficient and a stronger message is desired. Fixed dollars are typically assigned as a one-time fine that is ideal for measures involving planning-related standards. Many planning actions use forward-looking assumptions. If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome.

### **Dollar per MW**

Dollar/MW sanctions are intended to be used primarily for operationally based standards. The ‘MW’ can be load, generation, or flow on a line. The reasonableness of the sanction must be considered when assessing \$/MW penalties. Assessing large financial penalties is not the goal, but rather achieving compliance.



**Standard 200 – Operate Within Interconnection Reliability Operating Limits**

<b>Occurrence Period Category</b>	<b>Number of Violations in Occurrence Period at a Given Level</b>			
1 <sup>st</sup> Period of Violations (Fully Compliant Last Period)	1	2	3	4 or more
2 <sup>nd</sup> Consecutive Period of Violations		1	2	3 or more
	\$ Sanction from Table; Letter (C ) only if Letter (B) previously sent			
3 <sup>rd</sup> Consecutive Period of Violations			1	2 or more
	\$ Sanction from Table; Letter (C ) only if Letter (B) previously sent			
4 <sup>th</sup> or greater Consecutive Period of Violations				1
	\$ Sanction from Table; Letter (C )			

<b>Level of Non-Compliance</b>	<b>Sanctions Associated with Non-compliance</b>			
Level 1	Letter (A)	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW
Level 2	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW
Level 3	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW
Level 4	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW	Letter (B) and \$10,000 or \$10 Per MW

**Interpreting the Tables:**

- These tables address penalties for violations of the same measure occurring in consecutive compliance reporting periods.
- If a participant has non-compliant performance in consecutive compliance reporting periods, the sanctions applied are more punitive.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
 The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
 E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

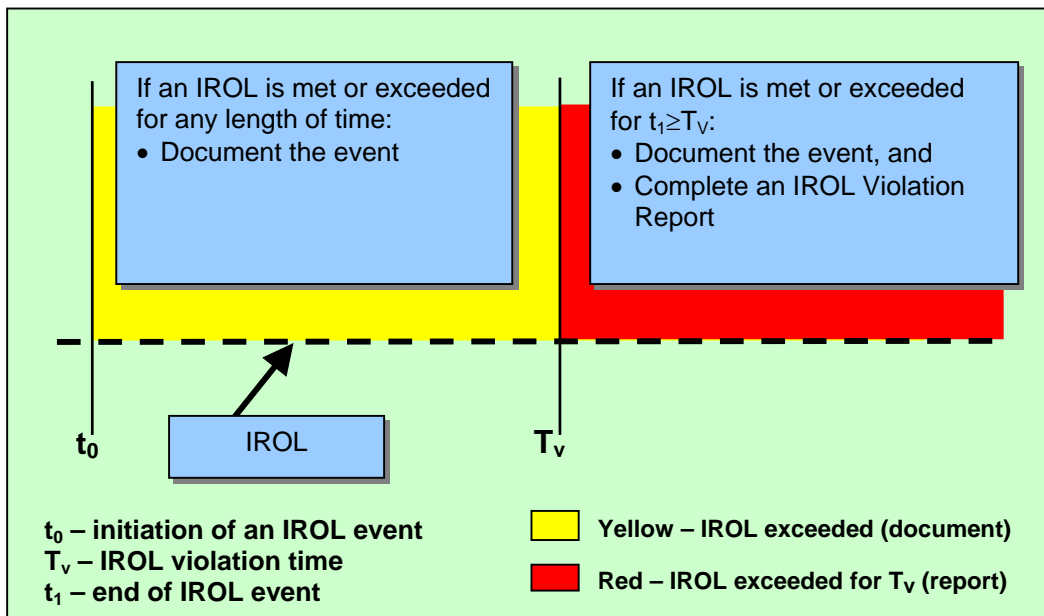
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

**Major Changes to this Standard:**

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

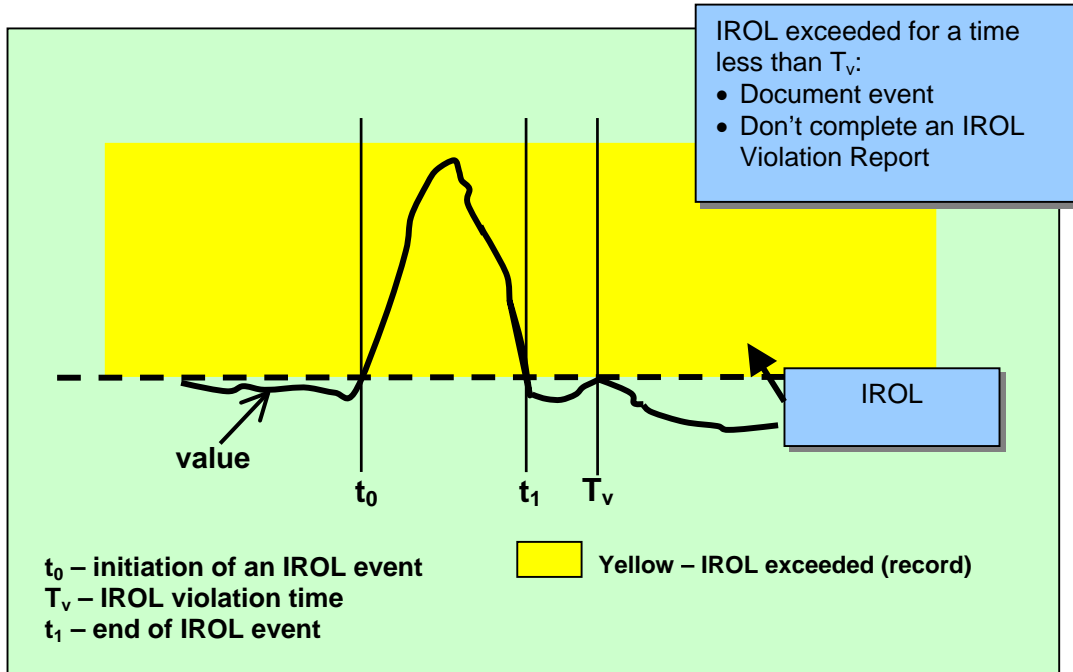
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

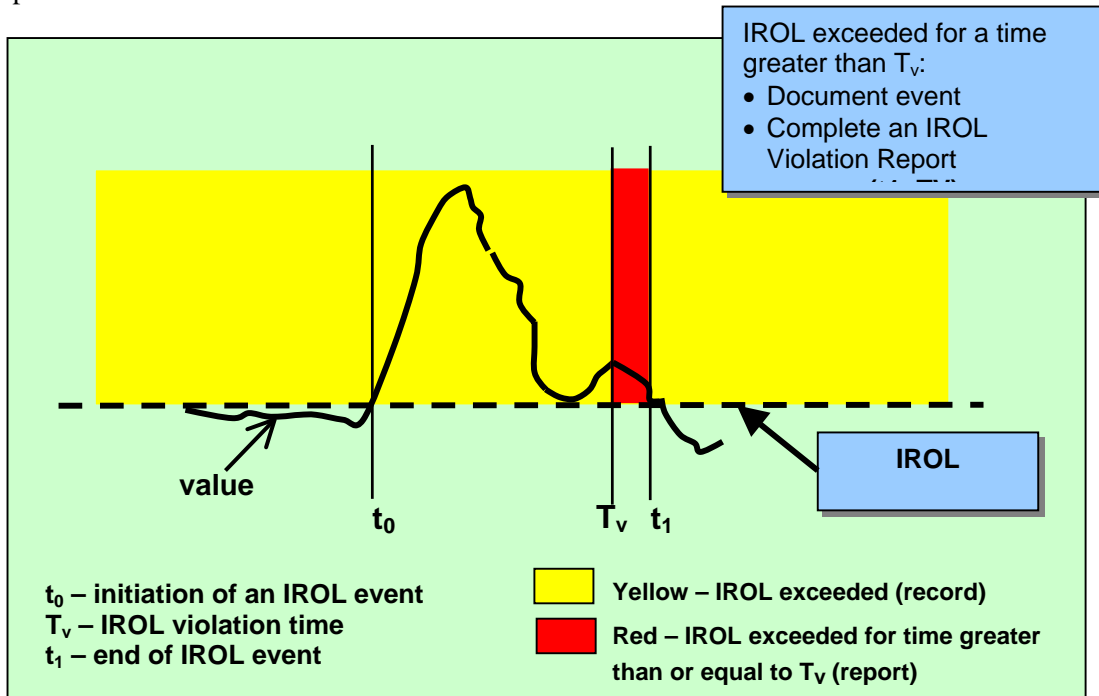


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

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**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
**I would suggest that the terms Documentable IROL Violation and IROL Event be combined in a single definition. Offer the following:**

**IROL Event: An instance.....for any length of time. These events are documentable IROL violations.**

**Similarly for IROL Violation and Reportable IROL Violation.**

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
 The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
 E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

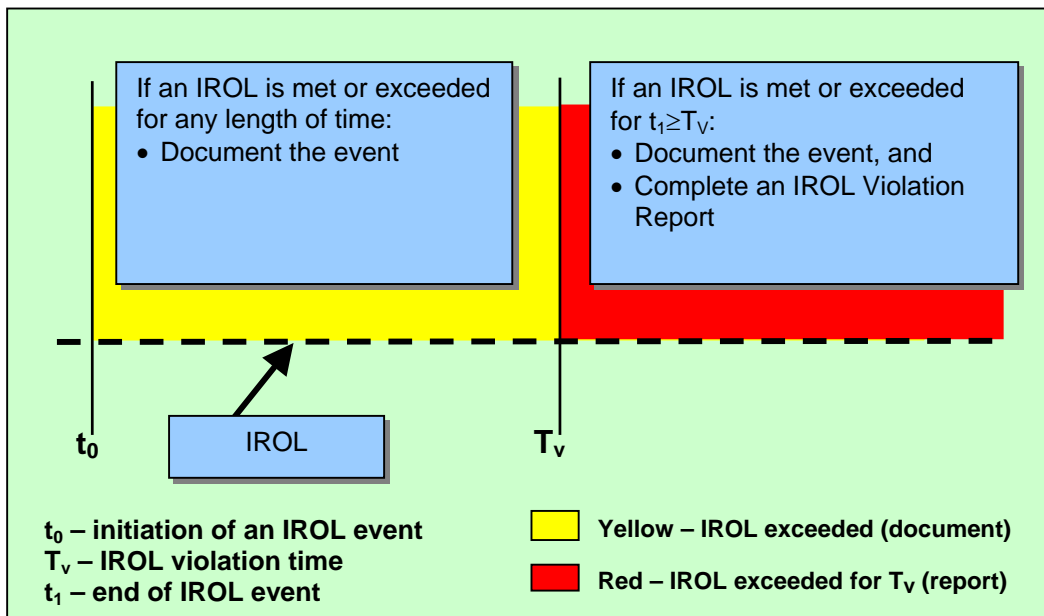
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

**Major Changes to this Standard:**

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

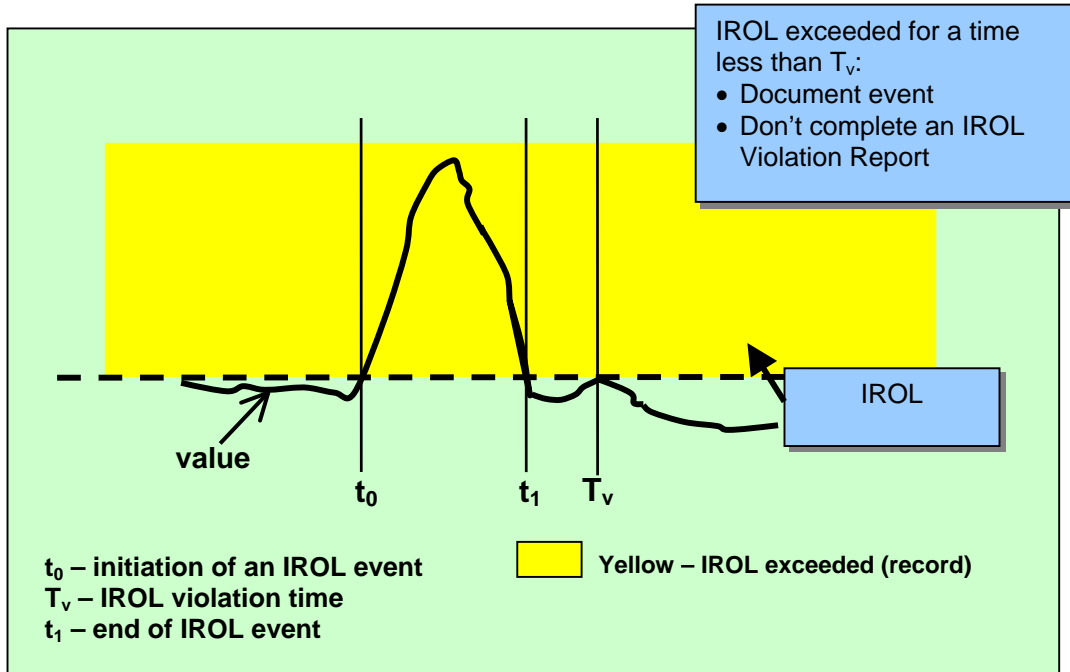
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

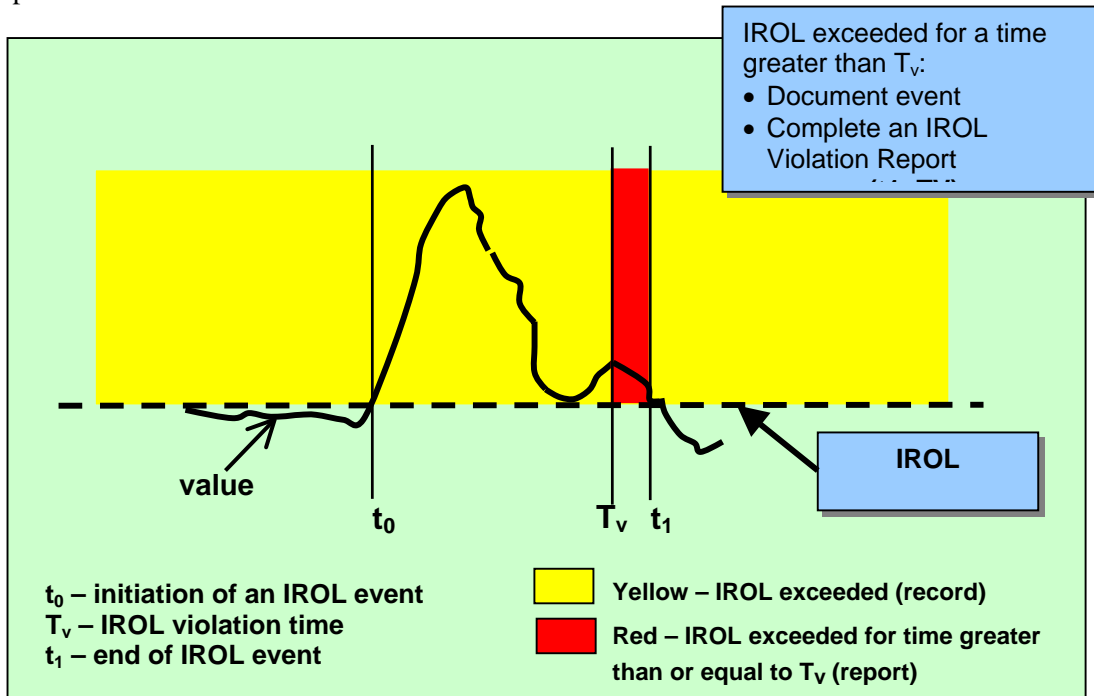


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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201: Don't understand why the standard references the Planning Authority and "entity responsible. Isn't the Reliability Authority the function ultimately responsible for determining IROLs? Also believe that section 1.2.1 should be revised to read: "The reliability authority shall identify a maximum response time (Tv) for all interconnection reliability operating limits within its reliability area." Regarding the levels of non-compliance, believe there should be a level (level 3?) for a partial list of IROLs.

### Requirement 202 - Monitoring

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202: Regarding compliance monitoring, suggest that section 4.3.2 be added to allow compliance monitor inspection of RA audited limit data. With respect to levels of non-compliance, seems that items 5.4.2 an 5.4.3 should have some sort of time boundaries associated

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with them before sanctions can be assessed. For example, is the sanction the same regardless of whether real-time data is unavailable for 5 minutes or 5 days?

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205: A little concerned that the entities required to provide data not have to submit the same data to multiple authorities. For example, some of the data that the RA will want from a generator operator for its models, should be the same data required by the PA for its models. The generator operator should only have to submit this data one time (to some central data

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collecting point), to be utilized by all functions that have a need for it. This should make the data collection processes more efficient for all and decrease the possibility of data errors.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206: In the requirements and measures section, would like to see language added that will be more specific as to where entities can obtain RA specifications for data provision. For example, section 1.1 could be modified to read as follows: " Each entity performing one of the following functions shall provide data, as specified *in the RA's business practice manual*, to the reliability authority(ies) with which is has a reliability relationship."

Regarding the compliance monitoring process, section 4.3.1 may be inconsistent since the method of transmitting data is not specified.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207: Suggest adding a requirement that the RA notify those entities impacted by the action plan, of their responsibilities within the action plan. This will enable them to incorporate the required actions into their own operating plans.

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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34. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 208: Suggest that the generator operator function be added to section 1.1. Regarding the levels of non-compliance, agree that an entity should be penalized for not following a RA's directive, but question whether it is appropriate to take every violation to level four.

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments** If information critical to the reliability of the power system is not being provided to the RA, notifying the compliance monitor of this fact as soon as possible, rather than waiting for annual self-certification under section 206 of the standard, seems to be a reasonable response.

**37. Any other comments on this standard?**

None



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

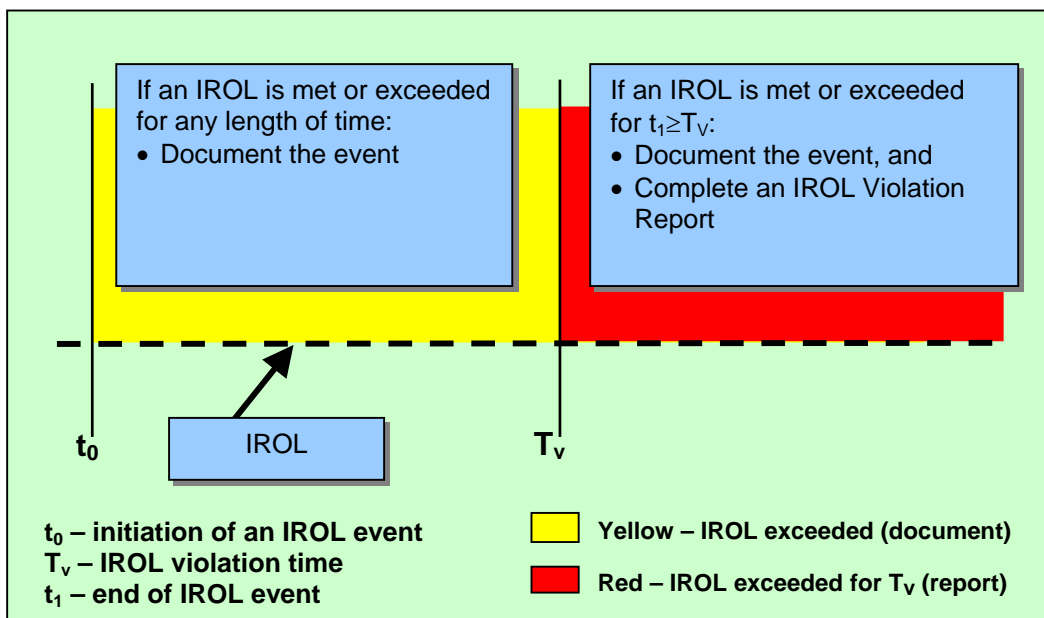
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

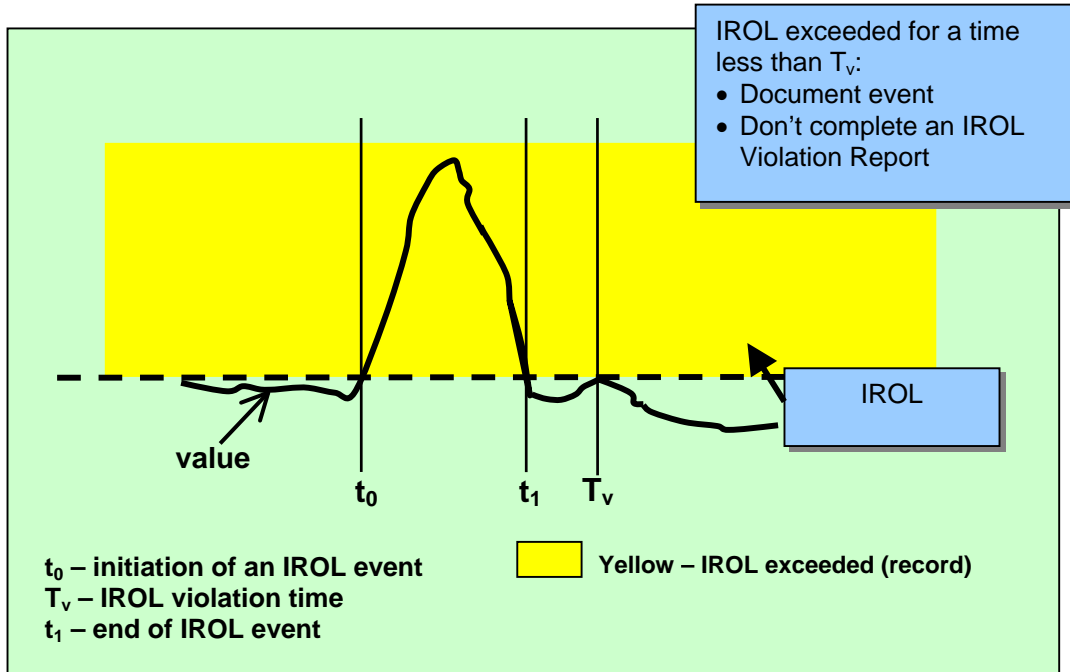
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

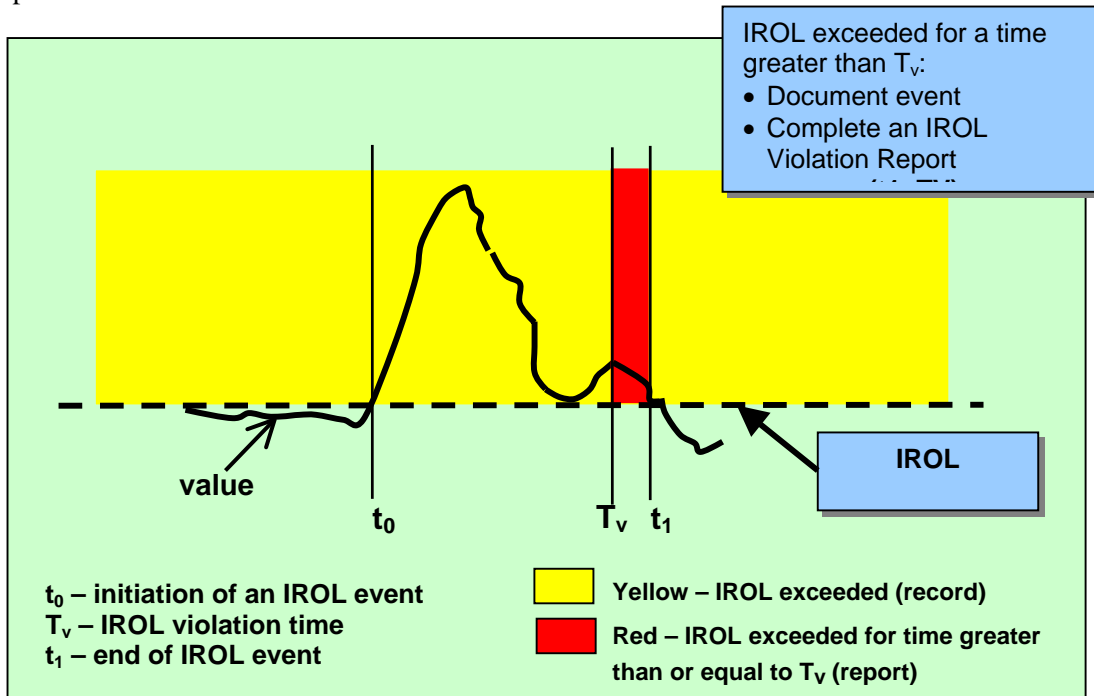


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Mark A. Heimbach
<b>Organization</b>	PPL Generation
<b>Industry Segment #</b>	5
<b>Telephone</b>	610-774-4571
<b>E-mail</b>	maheimbach@pplweb.com

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?

Yes                       No

8. Do you agree with the measures?

Yes                       No

9. Do you agree with the compliance monitoring process?

Yes                       No

10. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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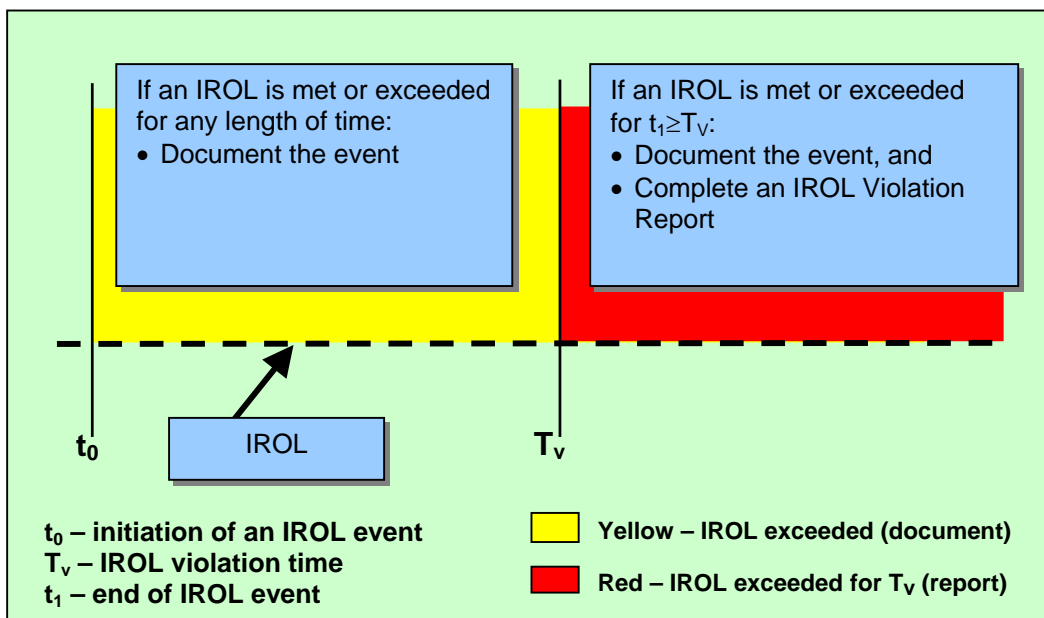
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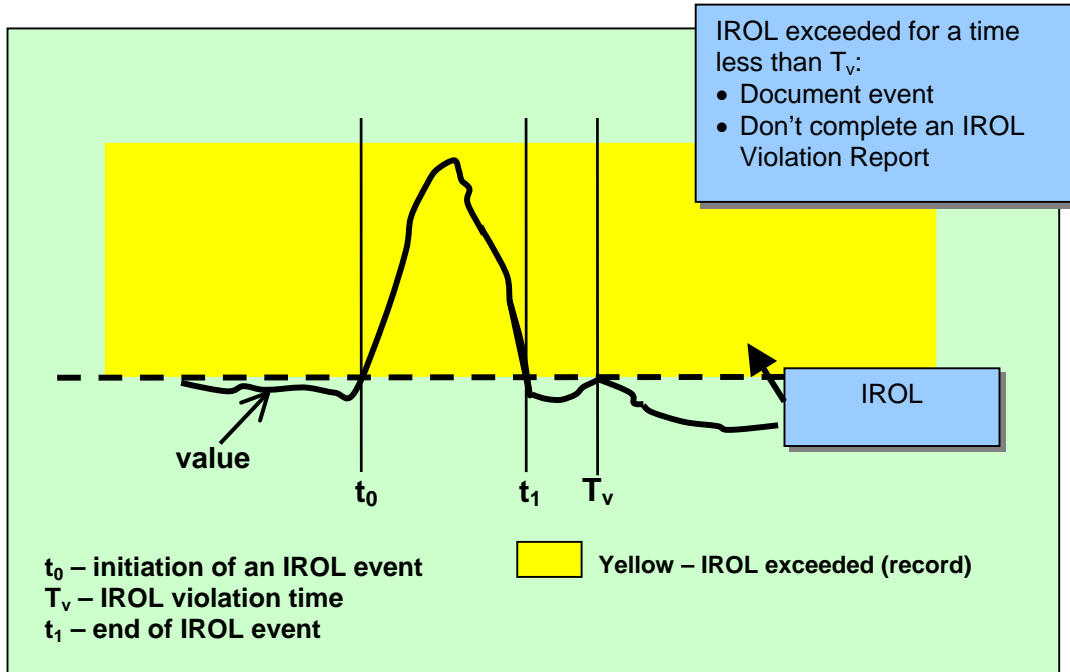
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

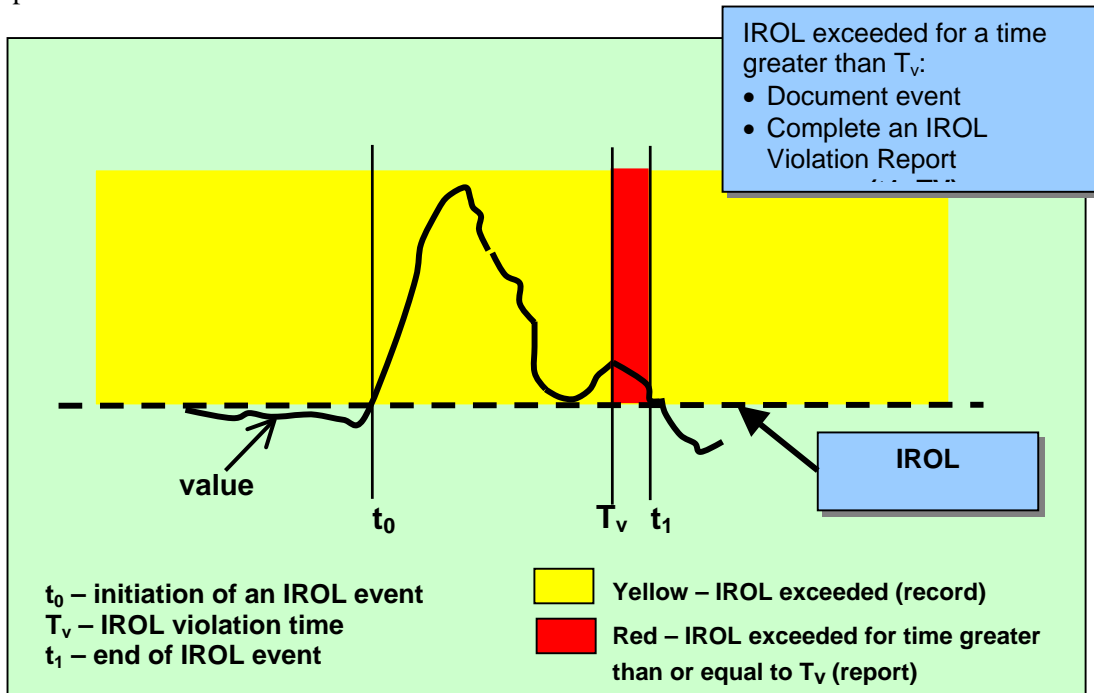


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

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For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
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- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
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### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

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**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
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The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

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**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>CenterPoint Energy Real Time Operations.</i>	<b>Group Chair:</b> <i>R. T. Sikes</i>	
	<b>Chair Phone:</b> <i>713-207-2395</i>	
	<b>Chair Email:</b> <i>richard.sikes@centerpointenergy.com</i>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>John Jonte</i>		
<i>Wayne Kemper</i>		
<i>Glenn Hemperley</i>		
<i>Brad Calhoun</i>		



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
We do not understand the total reason for changing Operations Security Limit to Interconnection Reliability Operating Limit, given its implications.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments We agree with removing redundancy, but not coordination.

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:  
We believe the reliability of the real-time bulk transmission system is a coordinated effort between the Reliability Authority and Transmission Operator and the data should be provided to both functions.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207: We believe that for an action plan to mitigate events it must be coordinated between involved parties, i.e. Reliability Authorities and Transmission Operators.

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:



**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
 The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
 E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

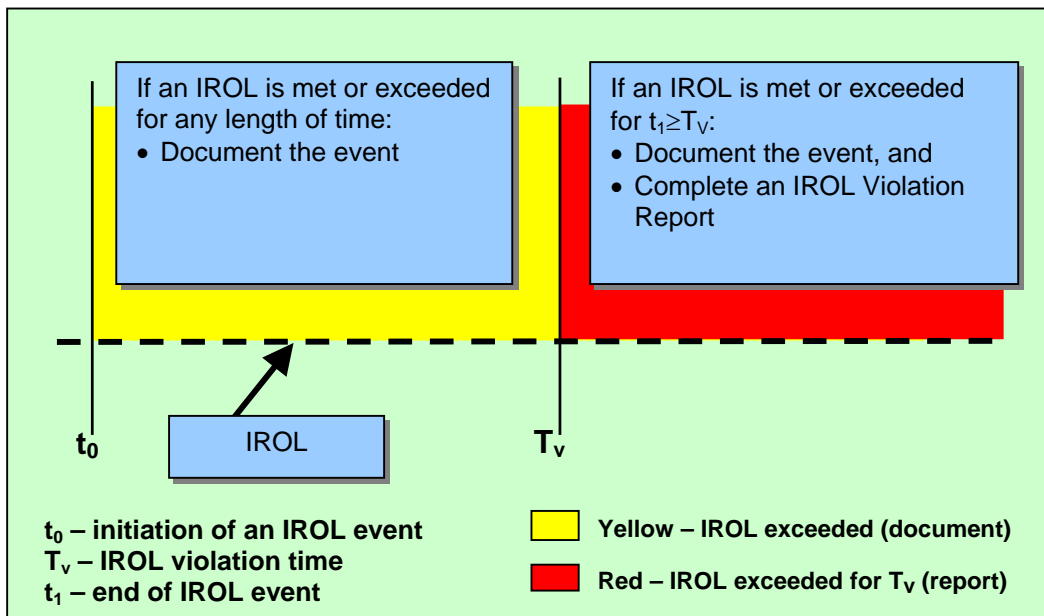
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

**Major Changes to this Standard:**

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

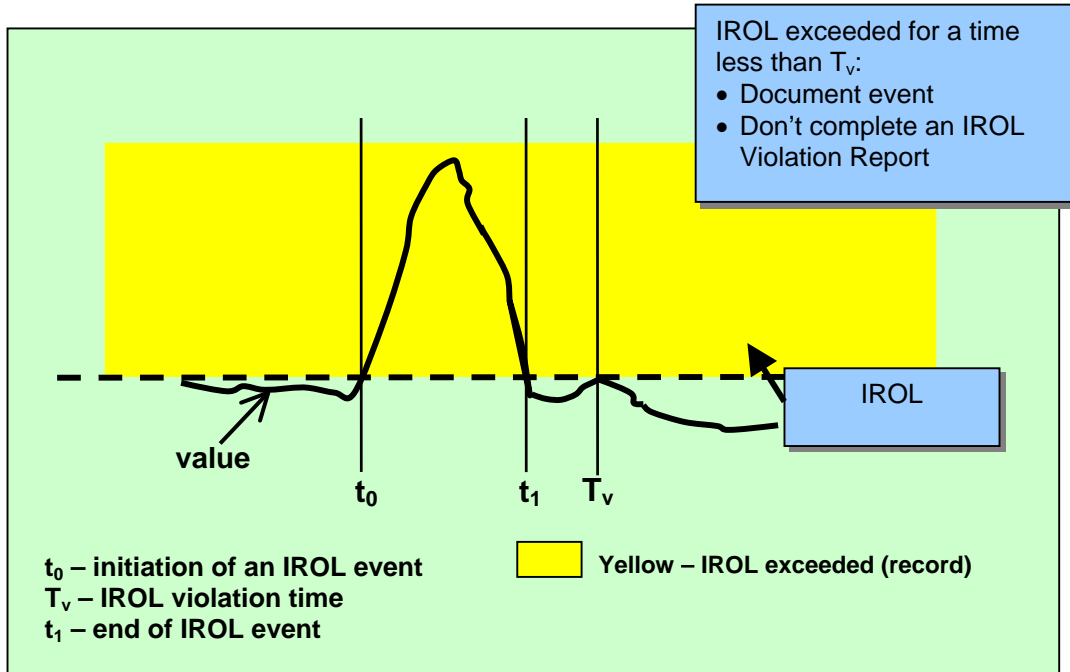
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

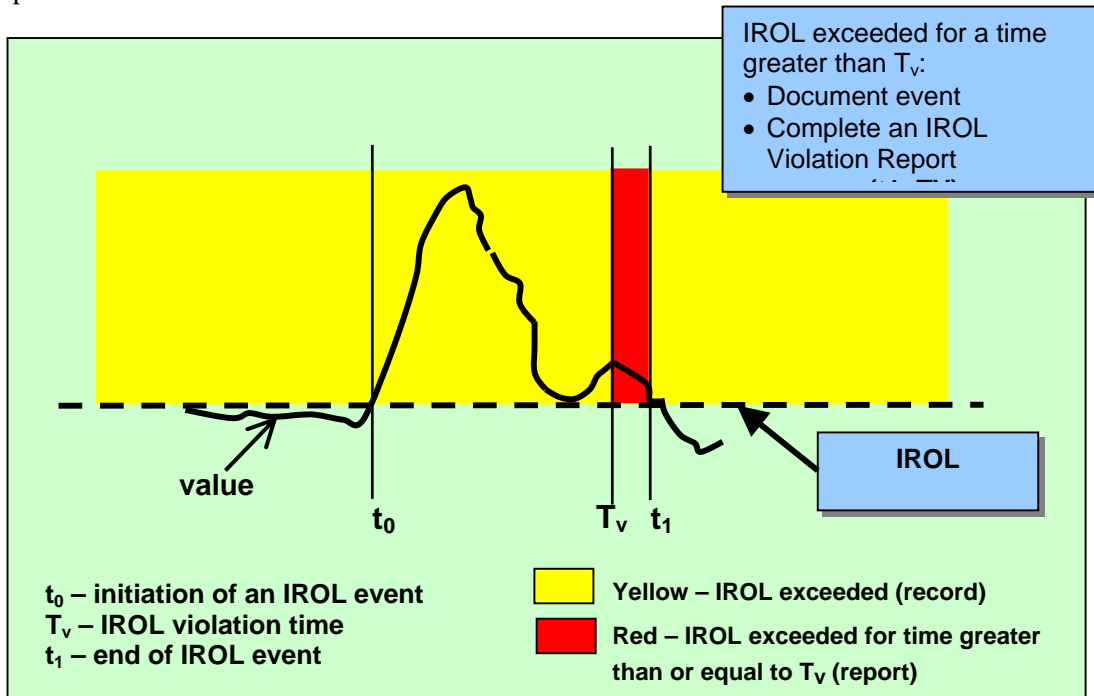


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

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**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b>Organization</b>	2 – RTO's, ISO's, RRC's
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	8 - Small Electricity Users
	9 - Federal, State, and Provincial Regulatory or other Govt. Entities

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>Transmission Subcommittee</i>	<b>Group Chair:</b> <i>Robert E. Reed</i>	
	<b>Chair Phone:</b> <i>(610) 666-8862</i>	
	<b>Chair Email:</b> <a href="mailto:reed@pjm.com">reed@pjm.com</a>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Robert E. Reed</i>	<i>PJM</i>	
<i>Daniel Cooper</i>	<i>Michigan Public Power Agency</i>	
<i>Ken Donohoo</i>	<i>ERCOT</i>	
<i>Michael Gildea</i>	<i>Duke-Energy, North America</i>	
<i>Francis Halpin</i>	<i>Bonneville Power Administration</i>	
<i>Tom Mallinger</i>	<i>Midwest ISO</i>	
<i>Darrick Moe</i>	<i>Western Area Power Administration</i>	
<i>Scott Moore</i>	<i>American Electric Power</i>	
<i>Bill Slater</i>	<i>Florida Power Corporation</i>	
<i>Tom Stuchlik</i>	<i>Western Resources</i>	
<i>Joseph Styslinger</i>	<i>Southern Company</i>	
<i>David Thorne</i>	<i>D. H. Thorne Consultants, Inc</i>	
<i>Robert Waldele</i>	<i>New York ISO</i>	
<i>Roman Carter</i>	<i>Southern Company</i>	
<i>John Ahr</i>	<i>Alleghany Power Systems</i>	
<i>Susan Morris</i>	<i>SERC</i>	
<i>Ed Pfeiffer</i>	<i>Ameren</i>	
<i>Ray Palmieri</i>	<i>ECAR</i>	
<i>Tom Vandervort</i>	<i>NERC</i>	

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

- 1) All of the definitions should be cross-referenced against the Functional Model and other standards to ensure the same term has a consistent definition. For example "Reliability Authority Area" and "Transmission Operator" within this standard is different than in the Functional Model.
- 2) "Bulk Electric System" definition within this standard is a bit ambiguous. The TS knows that "Bulk Electric System" is a controversial term that has different meanings to different individuals, but a more in-depth definition is recommended (no suggestion).
- 3) "Documentable Interconnection Reliability Operating Limit Violation" and "Interconnection Reliability Operating Limit Event" have identical definitions.
- 4) Suggestion: "Real-time Monitoring" – Personnel are available to see and hear various real-time data sources as conditions dictate.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205: 1) Requirement 205, 1.1, The TS recommends enhancing the last sentence to read "This includes specifying and collecting data from entities such as:"  
2) The TS recommends adding "1.1.6. Planning Authority."  
3) The TS recommends enhancing 1.3. to read "The reliability authority shall notify its compliance monitor when an entity does not provide data as specified."





**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

The TS recommends identifying the terms used in the standards that are found in the new Standards Process “Glossary of Terms” repository. The TS suggests small capital letters, highlighted letters, bold letters, italicized letters or other method of making the defined words, terms and acronyms stand out.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

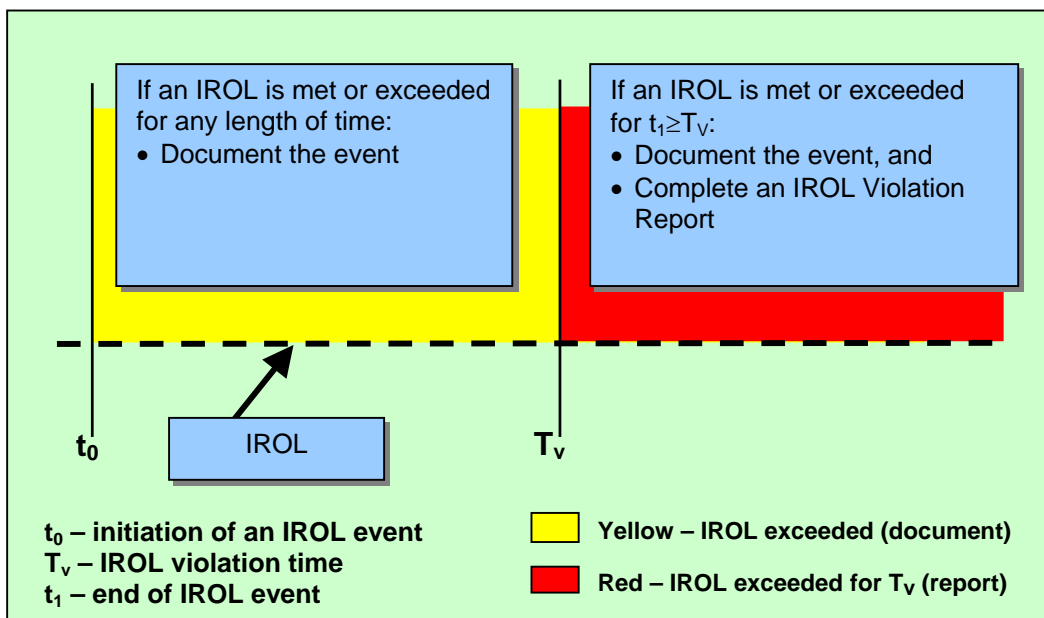
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

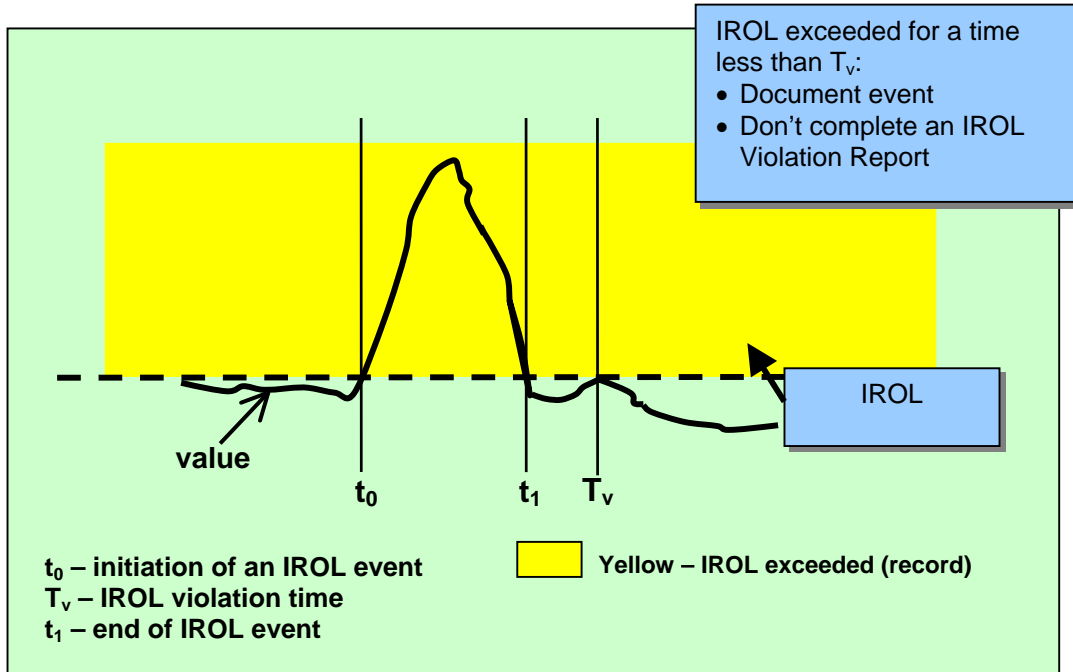
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

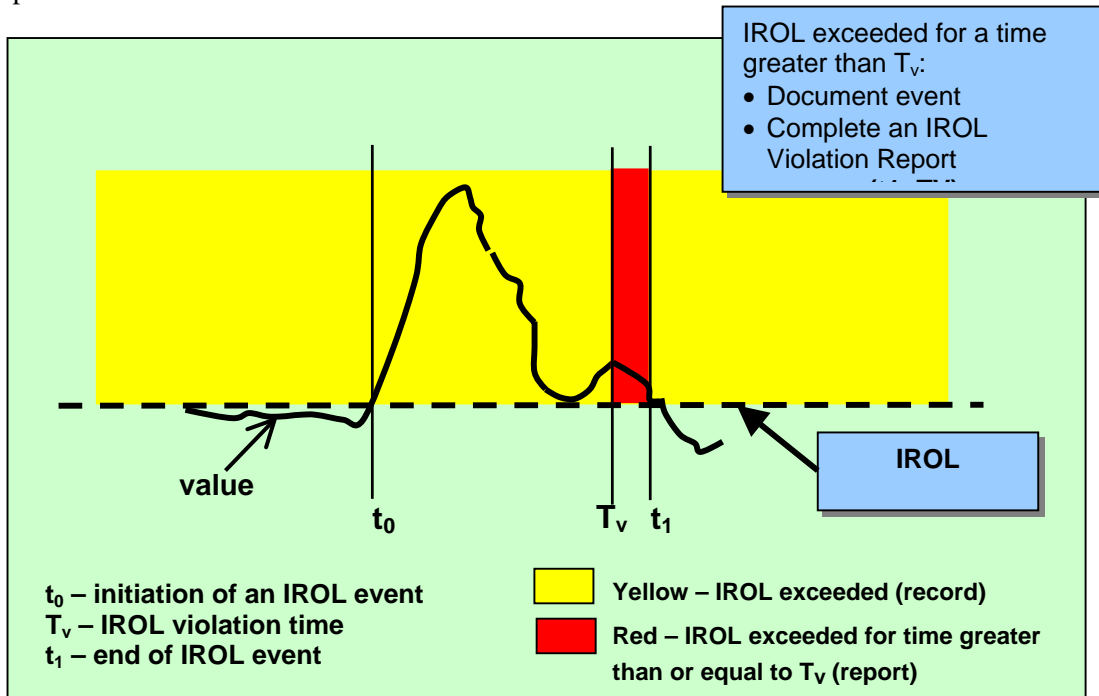


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>Southern Co. Generation &amp; Energy Marketing</i>	<b>Group Chair:</b> <i>Roman Carter</i>	
	<b>Chair Phone:</b> <i>205.257.6027</i>	
	<b>Chair Email:</b> <i>jrcarter@southernco.com</i>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Roman Carter</i>	<i>SCGEM</i>	<i>5, 6</i>
<i>Joel Dison</i>	<i>SCGEM</i>	<i>5,6</i>
<i>Tony Reed</i>	<i>SCGEM</i>	<i>5,6</i>
<i>Lucius Burris</i>	<i>SCGEM</i>	<i>5,6</i>
<i>David Deerman</i>	<i>SCGEM</i>	<i>5,6</i>
<i>Clifford Shepard</i>	<i>SCGEM</i>	<i>5,6</i>
<i>Michael Smith</i>	<i>SCGEM</i>	<i>5,6</i>
<i>Lloyd Barnes</i>	<i>SCGEM</i>	<i>5,6</i>
<i>Gary Miller</i>	<i>SCGEM</i>	<i>5,6</i>
<i>Terry Crawley</i>	<i>Southern Generation</i>	<i>5</i>
<i>Roger Green</i>	<i>Southern Generation</i>	<i>5</i>



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                      X No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

All the definitions should be cross-referenced against the Functional Model and other Standards to ensure the same term has a consistent definition. In particular, Reliability Authority Area and Transmission Operator have different wording than the Functional Model.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                      X No

Comments: It would be appropriate to leave the requirements for the Transmission Operator in the Standard as long as it is better clarified that the Transmission Operator is responsible for the local network system and not duplicating the Reliability Authority's responsibility for the overall Bulk electric system.

Furthermore, the comment on page 3, third paragraph in the Comment Form, "Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages" may need to be reworded or possibly removed in light of the recent Blackout. Does Local Network Integrity need to be addressed in a Standard itself?

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                      X No

4. Do you agree with the measures?

X Yes                       No

5. Do you agree with the compliance monitoring process?

X Yes                       No

6. Do you agree with the levels of non-compliance?

X Yes                       No

Comments about Requirement 201: The Transmission Owner should be added to 201 1.1.1 and 201 1.2.1.

### Requirement 202 - Monitoring

7. Do you agree with the requirement?

Yes                      X No

8. Do you agree with the measures?

X Yes                       No

9. Do you agree with the compliance monitoring process?

X Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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10. Do you agree with the levels of non-compliance?

X Yes       No

Comments about Requirement 202: Transmission Operator should be added to 202 1.1.1

**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?

Yes      X No

12. Do you agree with the measures?

X Yes       No

13. Do you agree with the compliance monitoring process?

X Yes       No

14. Do you agree with the levels of non-compliance?

X Yes       No

Comments about Requirement 203: The Transmission Operator should be added to 203 1.1.1, 203 1.1.2, 203 2.2.1.

**Requirement 204 - Actions**

15. Do you agree with the requirement?

X Yes       No

16. Do you agree with the measures?

X Yes       No

17. Do you agree with the compliance monitoring process?

X Yes       No

18. Do you agree with the levels of non-compliance?

X Yes       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes      X No

20. Do you agree with the measures?

X Yes       No

21. Do you agree with the compliance monitoring process?

X Yes       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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22. Do you agree with the levels of non-compliance?

X Yes       No

Comments about Requirement 205: Transmission Operator should be added along with the Reliability Authority for section 205 1.1.1

**Requirement 206 - Data Provision**

23. Do you agree with the requirement?

X Yes       No

24. Do you agree with the measures?

X Yes       No

25. Do you agree with the compliance monitoring process?

X Yes       No

26. Do you agree with the levels of non-compliance?

X Yes       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?

X Yes       No

28. Do you agree with the measures?

X Yes       No

29. Do you agree with the compliance monitoring process?

X Yes       No

30. Do you agree with the levels of non-compliance?

X Yes       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

X Yes       No

32. Do you agree with the measures?

X Yes       No

33. Do you agree with the compliance monitoring process?

X Yes       No

34. Do you agree with the levels of non-compliance?

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Yes

No

Comments about Requirement 208: If the RA makes an unreasonable request for data, whether it be the type of data needed or the timing of the data, the Transmission Operator, Balancing Authority, and the Interchange Authority will be considered totally (level 4) out of compliance if they do not fully comply. Therefore, a graduated scale is recommended.

### 35. List any Regional or Interconnection Differences for this standard:

### 36. Notifying the Compliance Monitor

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

Include in this standard

Include in a Compliance Enforcement Program Document

**Comments**

### 37. Any other comments on this standard?

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

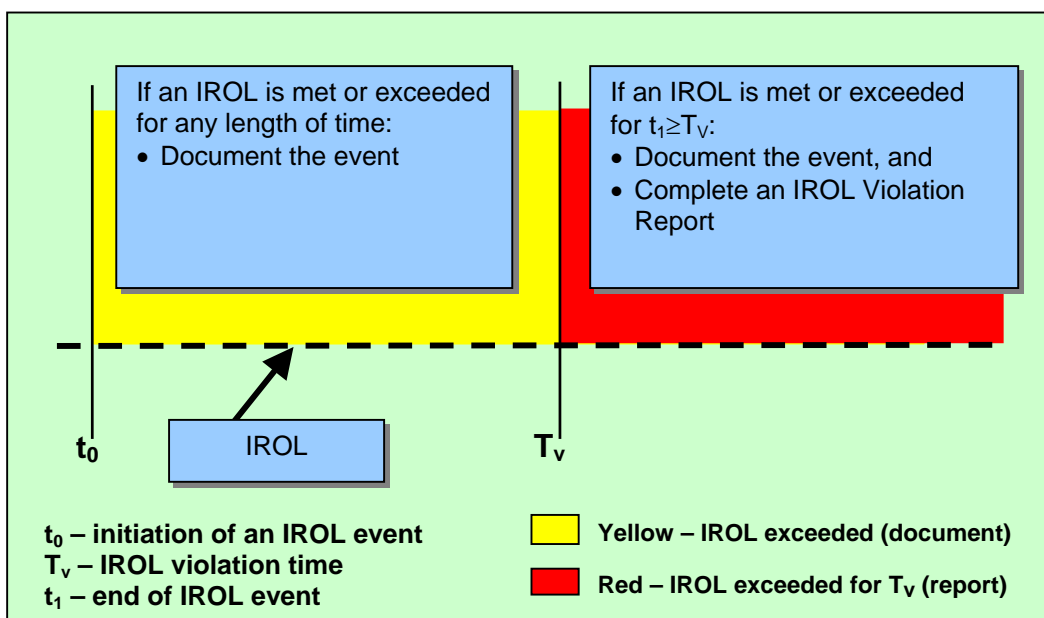
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

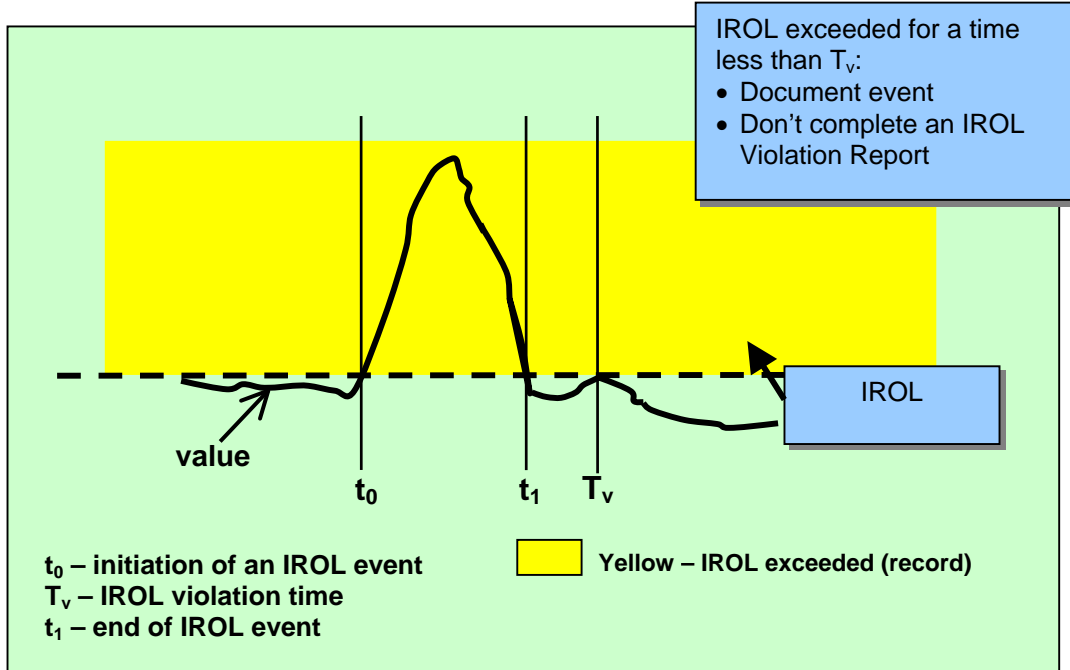
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

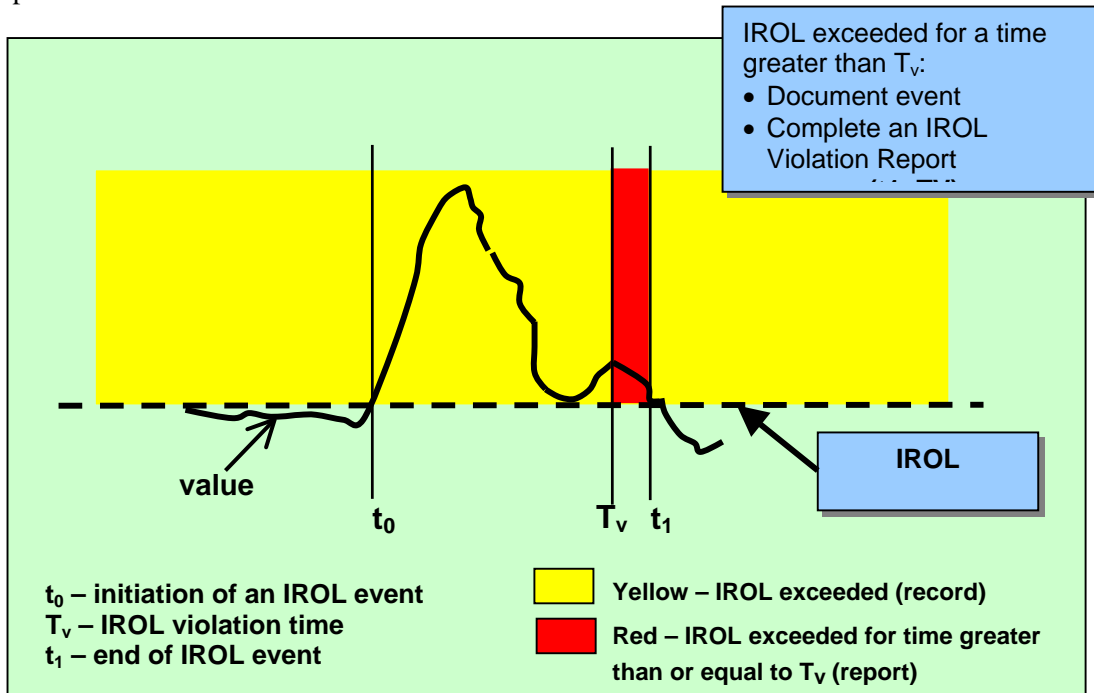


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.



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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

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<b>STD Commenter Information (For Individual Commenters)</b>	<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>SERC Operations Planning Subcommittee</i>	<b>Group Chair:</b> <i>Don Reichenbach</i>	
	<b>Chair Phone:</b> <b>704-382-3146</b>	
	<b>Chair Email:</b> <a href="mailto:dereiche@duke-energy.com">dereiche@duke-energy.com</a>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Carter Edge</i>	<i>Southeastern Power Administration</i>	<i>4 &amp; 5</i>
<i>William Gaither</i>	<i>South Carolina Public Service Authority</i>	<i>1</i>
<i>Mike Miller</i>	<i>Southern Company</i>	<i>1</i>
<i>Roger Brand</i>	<i>Municipal Electric Authority of Georgia</i>	<i>1</i>
<i>Phil Creech</i>	<i>Progress Energy - Carolinas</i>	<i>1</i>
<i>Gene Delk</i>	<i>South Carolina Electric and Gas</i>	<i>1</i>
<i>Al McMeekin</i>	<i>South Carolina Electric and Gas</i>	<i>1</i>
<i>Greg Ott</i>	<i>Alcoa-Yadkin</i>	<i>1</i>
<i>Doug Newbauer</i>	<i>Georgia System Operations</i>	<i>1</i>
<i>Mike Clements</i>	<i>Tennessee Valley Authority</i>	<i>1</i>
<i>Don Reichenbach</i>	<i>Duke Energy</i>	<i>1</i>
<i>Lynna Estep</i>	<i>SERC</i>	<i>2</i>
<i>Mark Creech</i>	<i>TVA</i>	<i>1</i>

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

Based on the following definitions, we do not believe that the definition of “*Documentable Interconnection Reliability Operating Limit Violation*” is necessary (is it truly a violation?). It appears that it is identical to the definition of “*Interconnection Reliability Operating Limit Event*” and the fact that an “*event*” must be documented is contained in the definition of “*Interconnection Reliability Operating Limit*”.

- **Documentable Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for any length of time.
- **Interconnection Reliability Operating Limit Event:** An instance of exceeding an interconnection reliability operating limit for any length of time.
- **Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ .
- **Interconnection Reliability Operating Limit:** A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to  $T_v$ . Note that  $T_v$  may be zero.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments: This should not preclude the Transmission Operator from conducting independent analysis.

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

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- What happens if you identify another (unexpected) limit during real-time that is not on the list? Are you not responsible for this case as well? We all know that planning studies cannot predict all the challenges that are faced in real-time.
- Who determines  $T_v$  and what restrictions are placed on the entity establishing it?

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. This Standard could be improved by formatting (where possible) Measurement 2.1 to relate to Requirement 1.1 and Measurement 2.2 to relate to Requirement 1.2, etc. rather than listing the measures and requirements arbitrarily and independently.

In order to tie the OEC's to the Measures, Section 4 should be clarified to read:

4.3. The entity responsible shall have the following Objective Evidence for Compliance available upon the request of its compliance monitor:

- 4.3.1. List of interconnection reliability operating limits for the reliability authority's reliability area **as described in Measure 2.1 above**
- 4.3.2. List of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits **as described in Measure 2.2 above**

### **Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
- 8. Do you agree with the measures?  
 Yes                       No
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No
- 10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measures it supports. It may be a practical solution that the real-time data and interconnection reliability operating limits be made available to operators in the form of a "display", however this solution is not prescribed in the measures and should not be listed exclusively.

We suggest that section 4.3.1 be rewritten to read:

- 4.3.1. Process used for monitoring and comparing real time data associated with interconnection reliability operating limits in accordance with Measure 2.3 above.**

This may be accomplished through the use of an operator display and should demonstrate compliance with Measures 2.1 and 2.2.

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

**4.3. The reliability authority shall demonstrate in accordance with Measure 2.1, the following upon the request of the compliance monitor:**

- 4.3.1. Ability to perform an operational planning analysis**
- 4.3.2. Ability to perform a real time assessment**

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

We have a general concern that the Reliability Authority is the only function held responsible for instances where the IROL is exceeded. Currently, not all RAs have operating responsibility over their systems. Some functions are delegated. With this in mind, the levels of non-compliance would pertain only to RAs, while they may not have direct control. For instance, the operating entities could choose not to follow the RA's direction. It seems that there should be a complimentary standard that would penalize operating entities for not adhering to the direction of the RA. The penalties should be ranked according to the severity of the situation. In other words, the entities who actually have the operating responsibility must be held accountable.

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Has the Interconnection Reliability Operating Limit Violation Report been developed yet? Is this the existing NERC Operating Policy 5, Appendix 5F as modified with the results of the Reliability Coordinator IRLV Field Test?

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

In section 2, the measures do not capture the requirement to PREVENT instances where IROLs may be exceeded. The following re-wording is suggested. Section 4, below is also slightly modified to align with change in the measurement.

2.1. **The reliability authority shall document each instance where actions are taken to prevent exceeding or to mitigate the magnitude and duration of interconnection reliability operating limit:**

2.1.1. The reliability authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)

2.2. The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ :

2.2.1. The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five business days of the initiation of the event. (The report includes the date and time of the event, identification of which interconnection reliability operating limit was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the interconnection reliability operating limit, actions taken or directives issued, and explanation of results of actions or directives.)

4.3. The reliability authority shall have the following available upon the request of its compliance monitor:

4.3.1. Operations logs or other documentation **in accordance with Measure 2.1 indicating the magnitude and duration of each interconnection reliability operating limit event** and the actions or directives issued for each of these instances

4.3.2. Interconnection Reliability Operating Limit Violation Reports **completed in accordance with Measure 2.2**

### **Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes

No

20. Do you agree with the measures?

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Yes                       No

21. Do you agree with the compliance monitoring process?

Yes                       No

22. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 205:

The requirement for data collection should be tied to its impact on reliability. Requirement 1.3 should be modified to read:

- 1.3. The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority does not provide data as specified **and this lack of data has an impact on reliability.**

Measurement 2.3.1 should be rewritten to read:

- 2.3.1. The notification shall take place within five business days of discovering that the data **having an impact on reliability** is missing.

In order to prevent a shotgun approach to data collection we propose Section 2.1.1 be modified to read:

- 2.1.1. Specification shall include a list of **minimum** required data, a mutually agreeable format, and timeframe and periodicity for providing data.

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

- 4.3. The reliability authority shall have the following available upon the request of the compliance monitor:

- 4.3.1. Data specification(s) **in accordance with Measure 2.1**

- 4.3.2. Proof of distribution of the data specification(s) **in accordance with Measure 2.2**

**Requirement 206 - Data Provision**

23. Do you agree with the requirement?

Yes                       No

24. Do you agree with the measures?

Yes                       No

25. Do you agree with the compliance monitoring process?

Yes                       No



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26. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 206:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measure it supports. A possible solution might be:

4.3.1. **Documentation** indicating data was sent to the reliability authority **in accordance with Measure 2.1**

Non-compliance in data submission could take several forms and levels of impact to reliability. Section 5 should be modified as follows:

5. Levels of Non-compliance:

5.1. Level one: **Data was provided, but not in the mutually agreed format**

5.2. Level two: **Data was provided, but not within the time-frame specified**

5.3. Level three: **Incomplete data was provided**

5.4. Level four: Data **was** not provided to the reliability authority as specified.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?

Yes  No

28. Do you agree with the measures?

Yes  No

29. Do you agree with the compliance monitoring process?

Yes  No

30. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 207:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. The Levels of non-compliance should be objectively determined based on the evidence.

Measure 2.1 should be modified to include:

2.1. The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall **identify and** be coordinated with those entities responsible for acting and with those entities impacted by such actions.

Section 4.3 should be modified to include:

4.3. The reliability authority shall make the following available for inspection by the compliance monitor upon request:

4.3.1 Action plan **developed in accordance with Measure 2.1**

Section 5 should be modified to include:

5. Levels of Non-compliance

- 5.1. Level one: Action plan exists but wasn't coordinated with all involved and impacted entities
- 5.2. Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities
- 5.3. Level three: **Action plan is incomplete**
- 5.4. Level four: No action plan

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

Yes                       No

32. Do you agree with the measures?

Yes                       No

33. Do you agree with the compliance monitoring process?

Yes                       No

34. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 208:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Non-compliance could take several forms and levels of impact to reliability. The Levels of non-compliance should be objectively determined based on the evidence.

Section 4.3.1 should be modified to read:

4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:

4.3.1.1. Date and time of each of directive received

4.3.1.2. Directive issued

4.3.1.3. Actions taken in response to directive **in accordance with Measure 2.1**

Section 5 should be modified as follows:

5. Levels of Non-compliance

5.1 Level one: Operations log or other data source(s) do not show one of the following:

5.1.1 Date and time of each of directive received

5.1.2 Directive issued

5.1.3 Actions taken in response to directive

5.2 Level two: Operations log or other data source(s) do not show any of the following:

5.1.4 Date and time of each of directive received

5.1.5 Directive issued

5.1.6 Actions taken in response to directive

5.3 Level three: Not applicable.

5.4 Level four: Did not follow directives.

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**35. List any Regional or Interconnection Differences for this standard:**

None

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments** We believe that it is appropriate to include this in the standard with the comments noted in Section 205.

**37. Any other comments on this standard?**

Please note that throughout the standard the Tv term is used but is not formatted the same (Tv vs. T<sub>v</sub>). This is a minor, formatting issue, but should be consistent throughout to reduce confusion.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

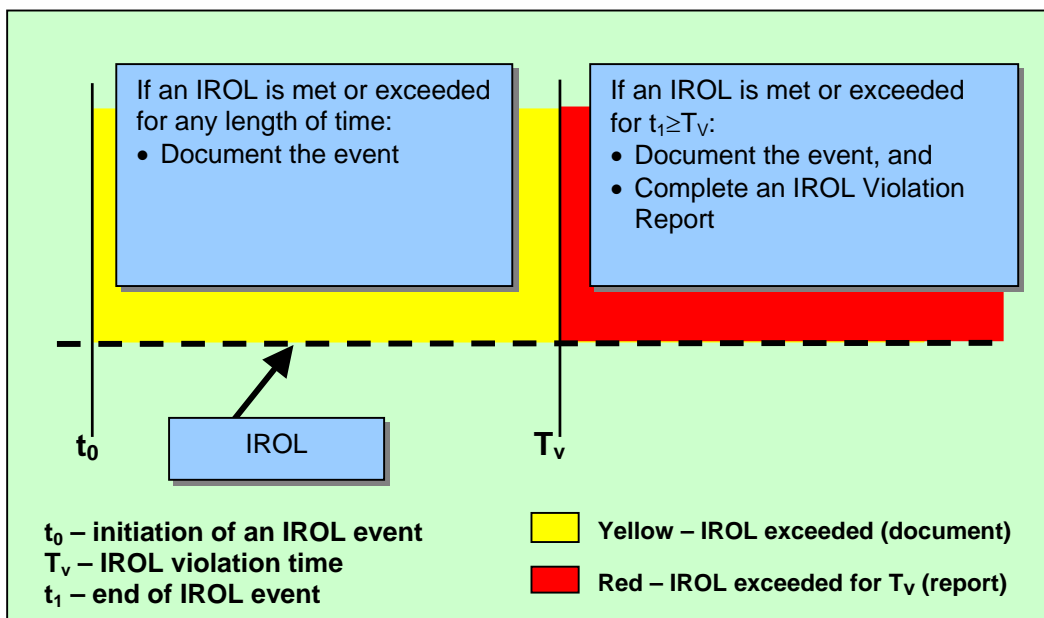
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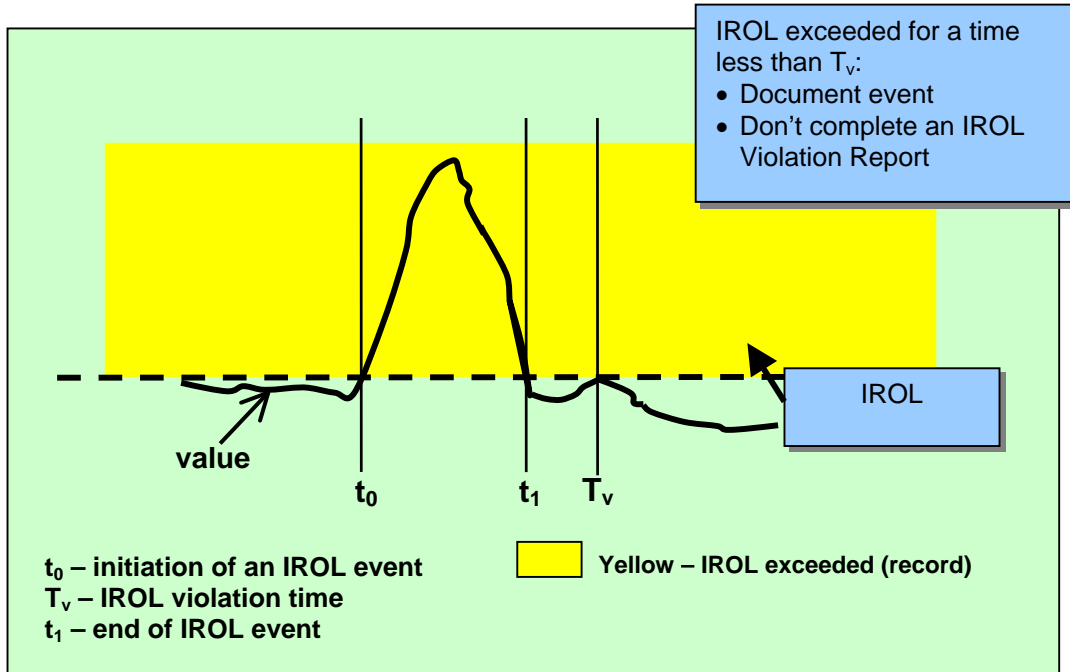
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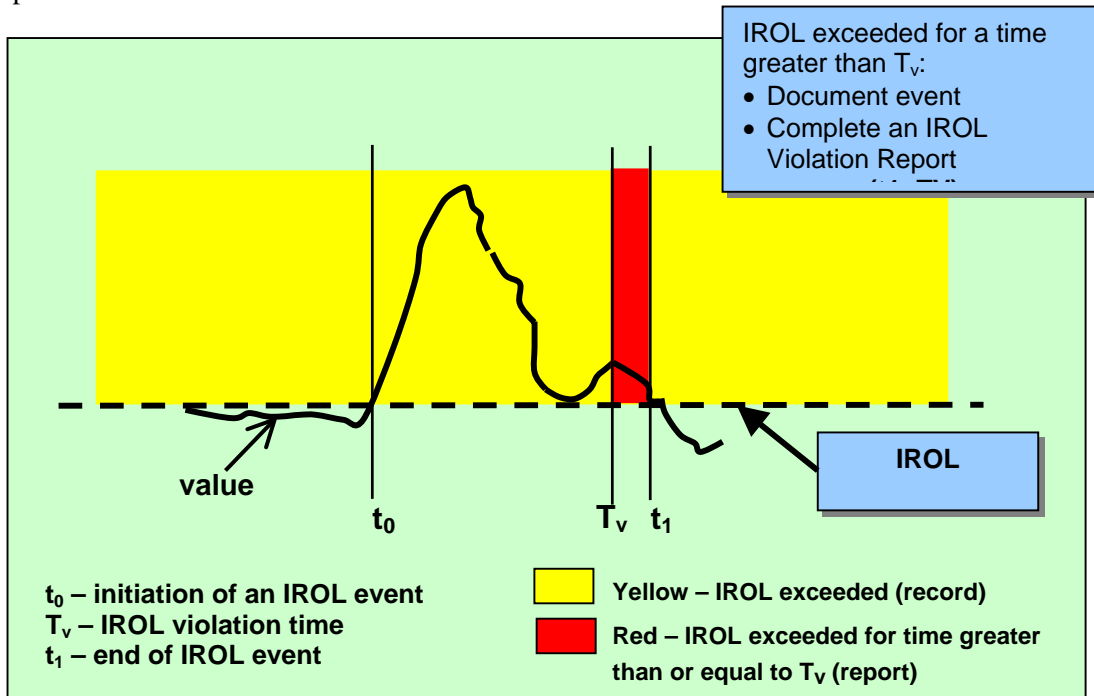


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
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**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
**I would suggest that the terms Documentable IROL Violation and IROL Event be combined in a single definition. Offer the following:**

**IROL Event: An instance.....for any length of time. These events are documentable IROL violations.**

**Similarly for IROL Violation and Reportable IROL Violation.**

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
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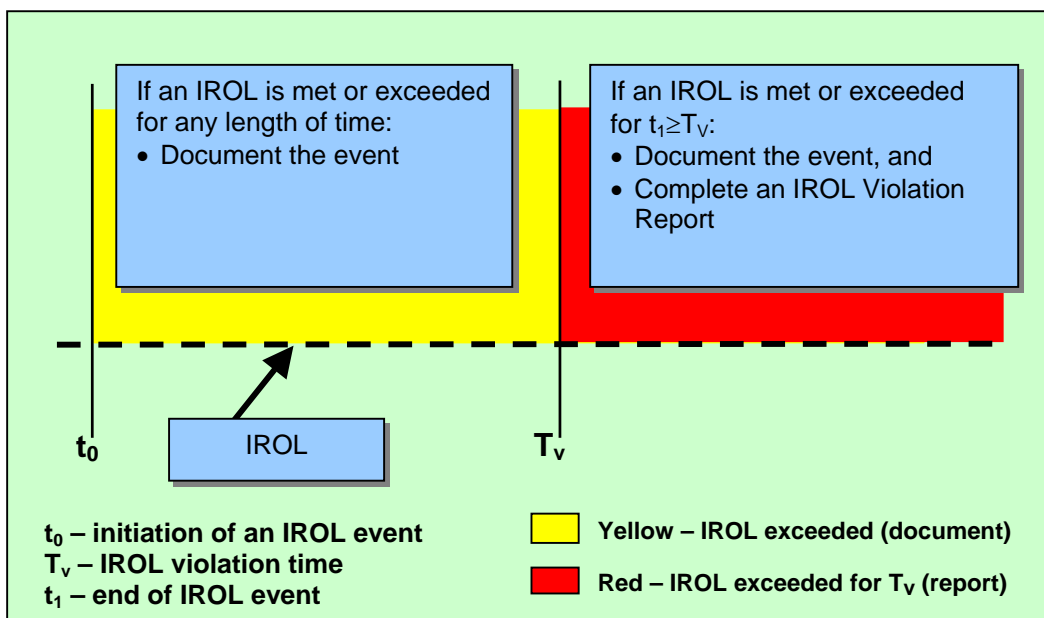
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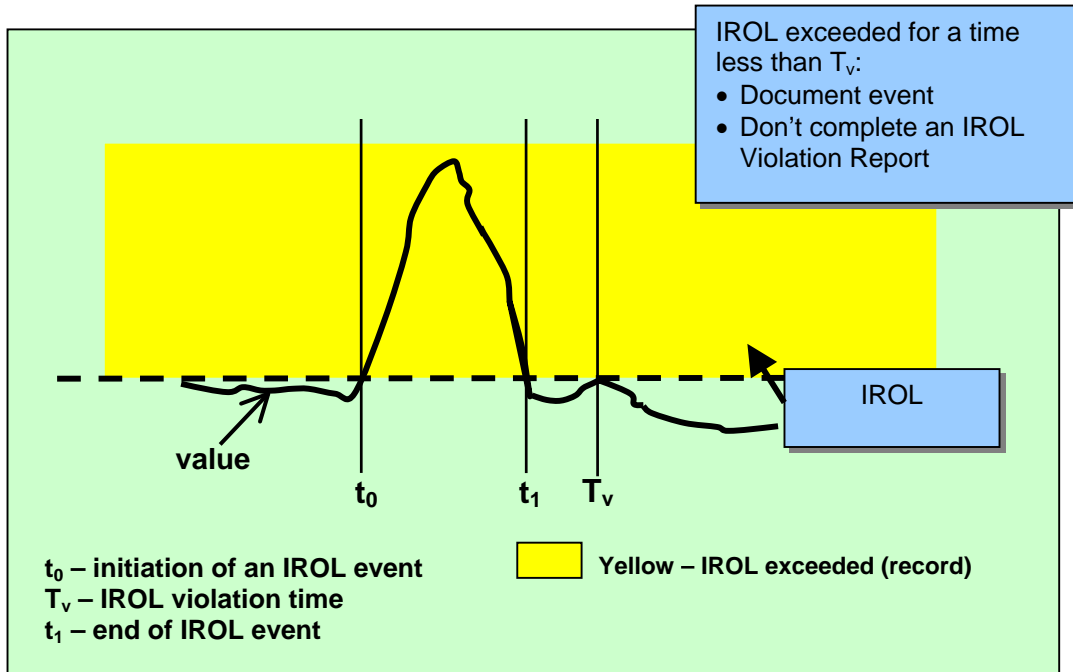
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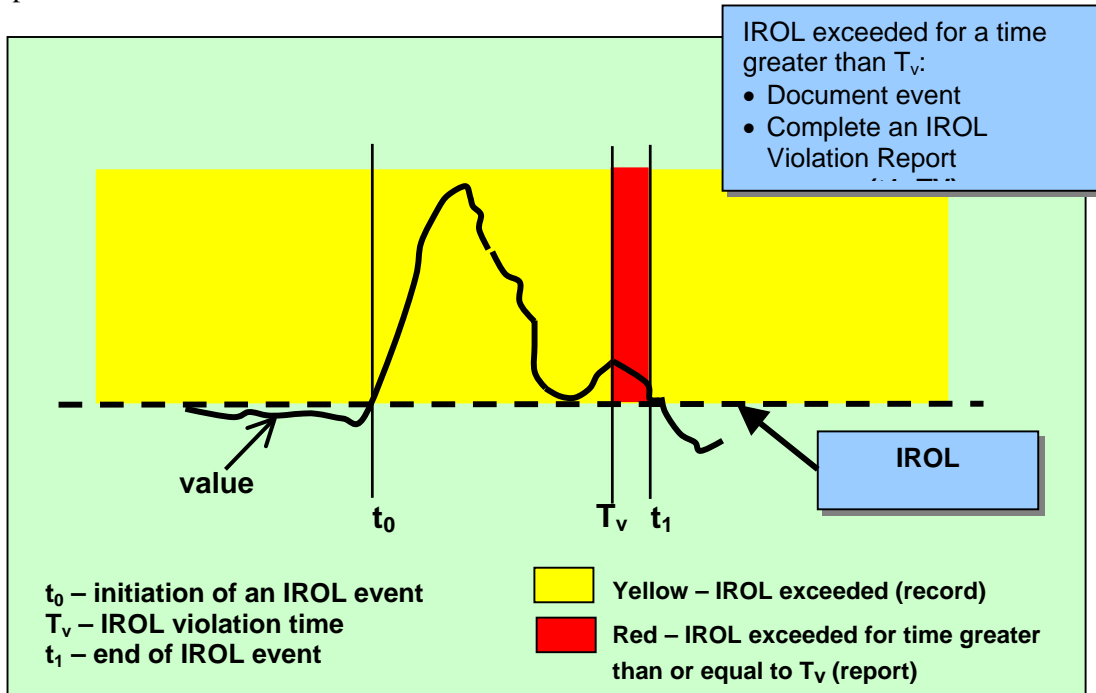


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**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Donald B. Idzior
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<b>Industry Segment #</b>	4
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<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

**I would recommend the definition Tv and section 1.2.1 be made consistent.**

**As the standard now reads, the definition of Tv is the violation time associated with a limit. Section 1.2.1 refers to the identification of Tv as a response time.**

**Those are two very different things.**

**The response limit must be the total time from when a flow/voltage/stability limit is first violated to when operator action is initiated and finally the system (transaction curtailments/generation redispatch/switching/load control action...) responds to bring the violated operating limit back to below the limit.**

**The definition should be changed to bring it in line with the usage in the standard.**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
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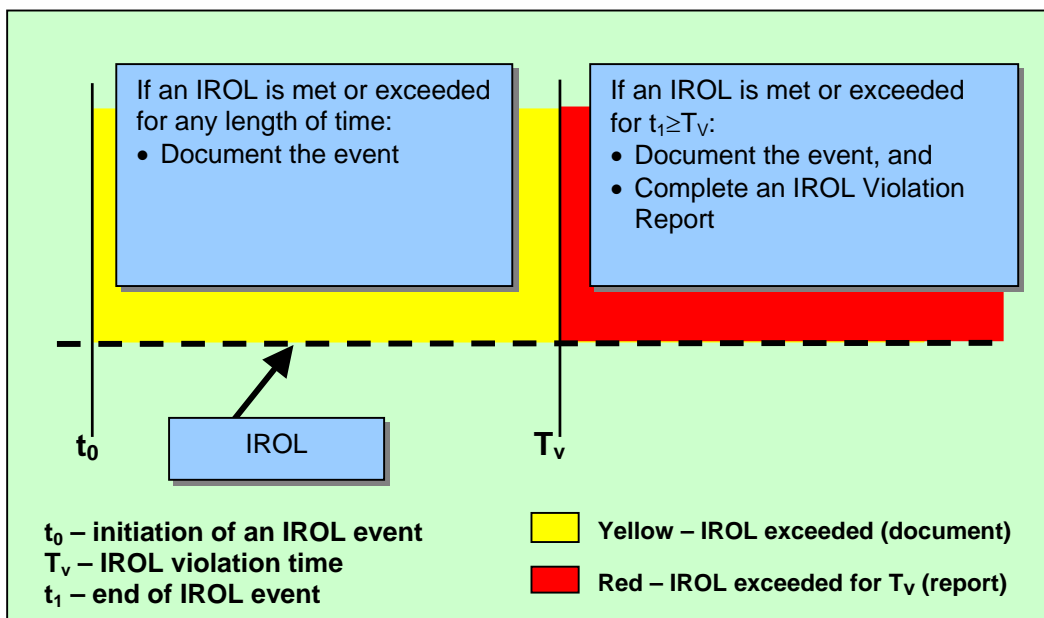
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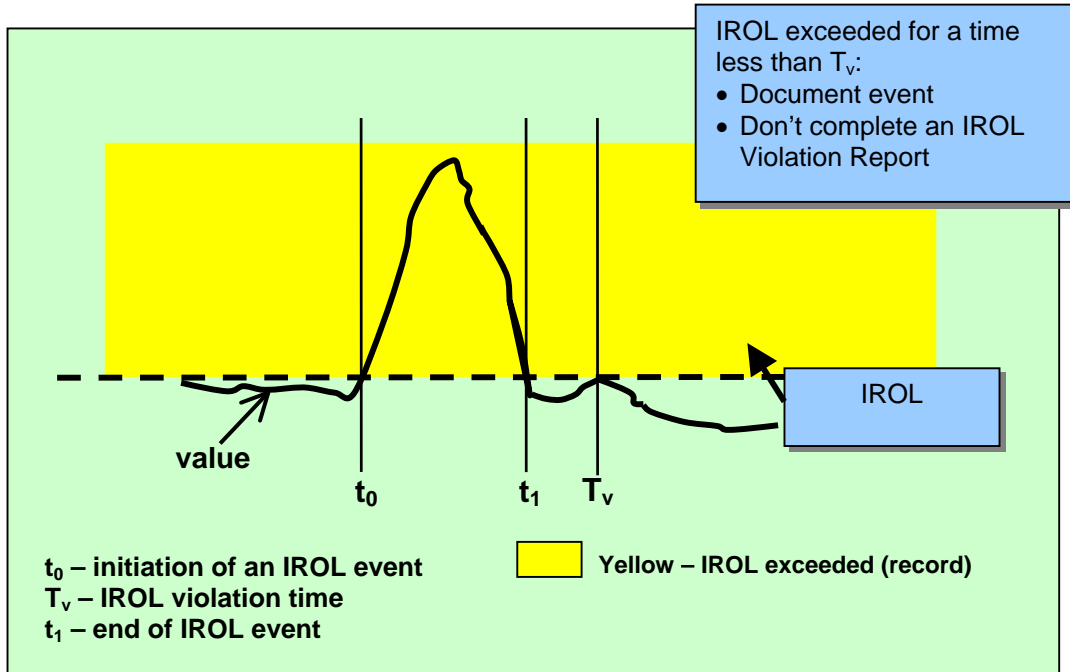
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

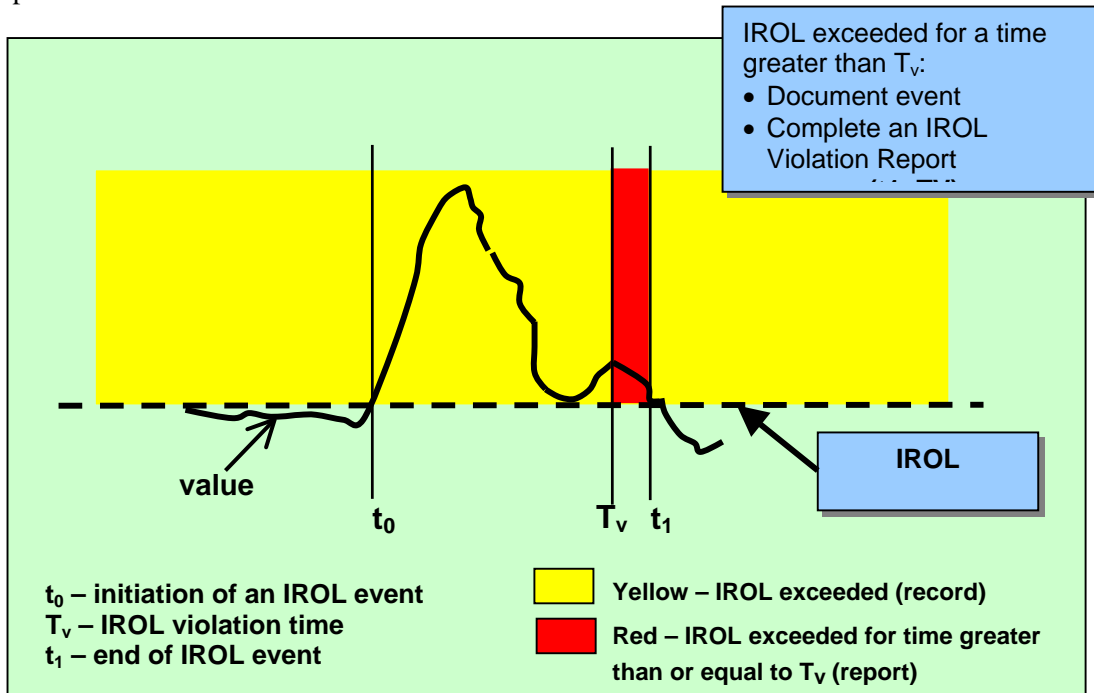


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

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This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
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The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

**The definitions involving Interconnection Reliability Operating Limit need to be cleaned up to increase clarity and to eliminate duplication.**

- a) Remove the definition for “Documentable Interconnection Reliability Operating Limit Violation”**
- b) Remove the definition for “Reportable Interconnection Reliability Operating Limit Violation”**
- c) Change, as follows, the definition for “Interconnection Reliability Operating Limit Event: An instance of exceeding an Interconnection Reliability Operating Limit for any length of time. The event must be documented (logged).”**
- d) Change, as follows, the definition for “Interconnection Reliability Operating Limit Violation: An instance of exceeding an Interconnection Reliability Operating Limit for a time greater than or equal to Tv. This is an event that has progressed to also become a violation. The event must be documented and the violation must be reported (to the compliance monitor).”**

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

- 3. Do you agree with the requirement?  
 Yes                       No
- 4. Do you agree with the measures?  
 Yes                       No
- 5. Do you agree with the compliance monitoring process?  
 Yes                       No
- 6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
- 8. Do you agree with the measures?  
 Yes                       No
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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10. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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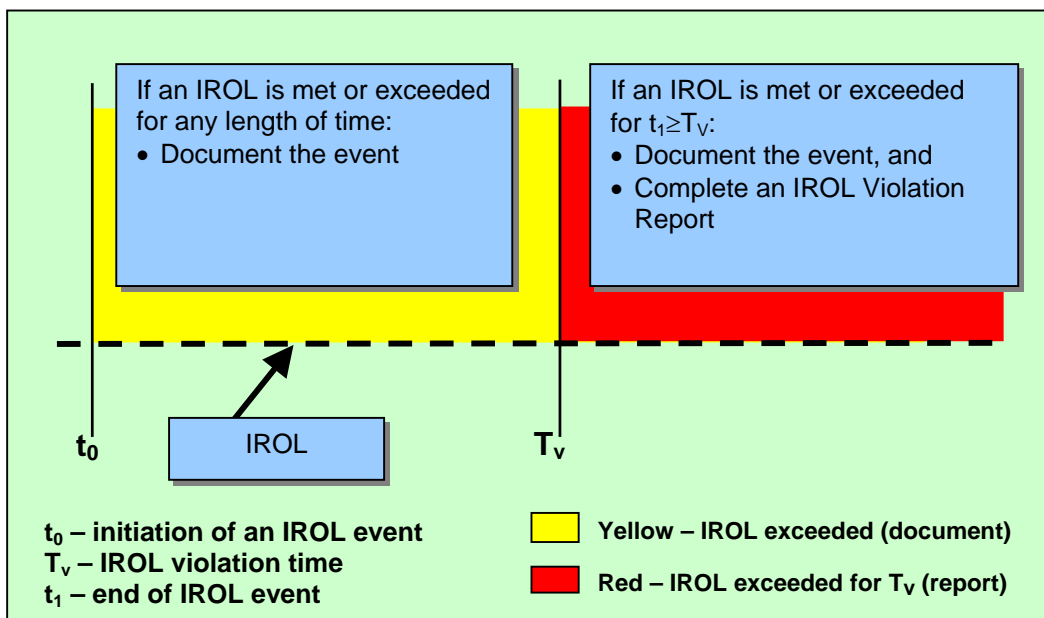
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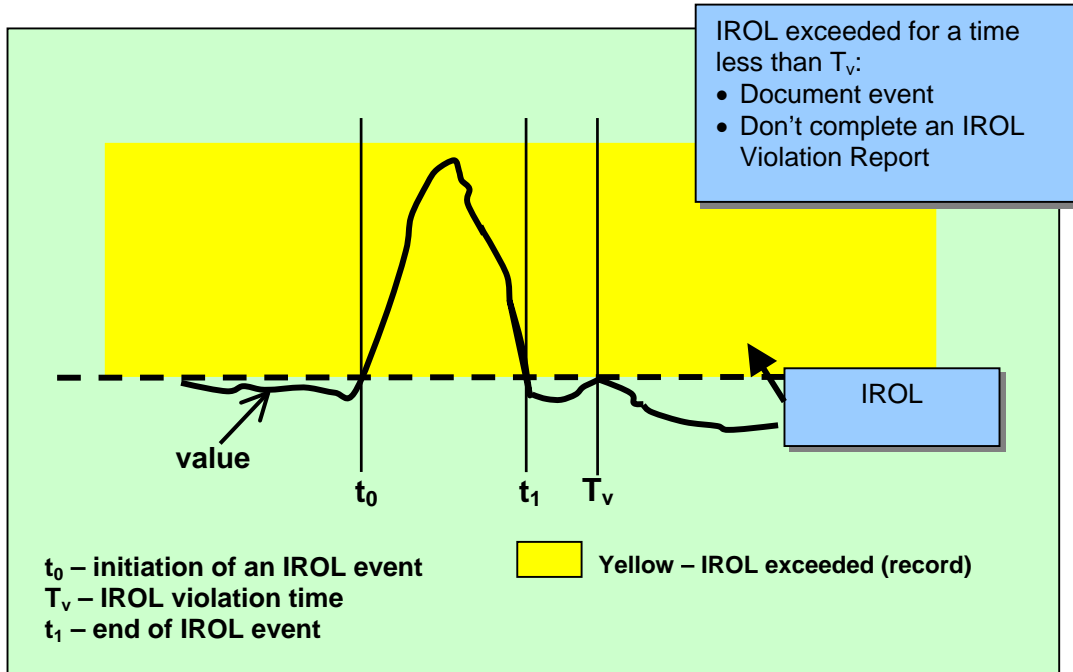
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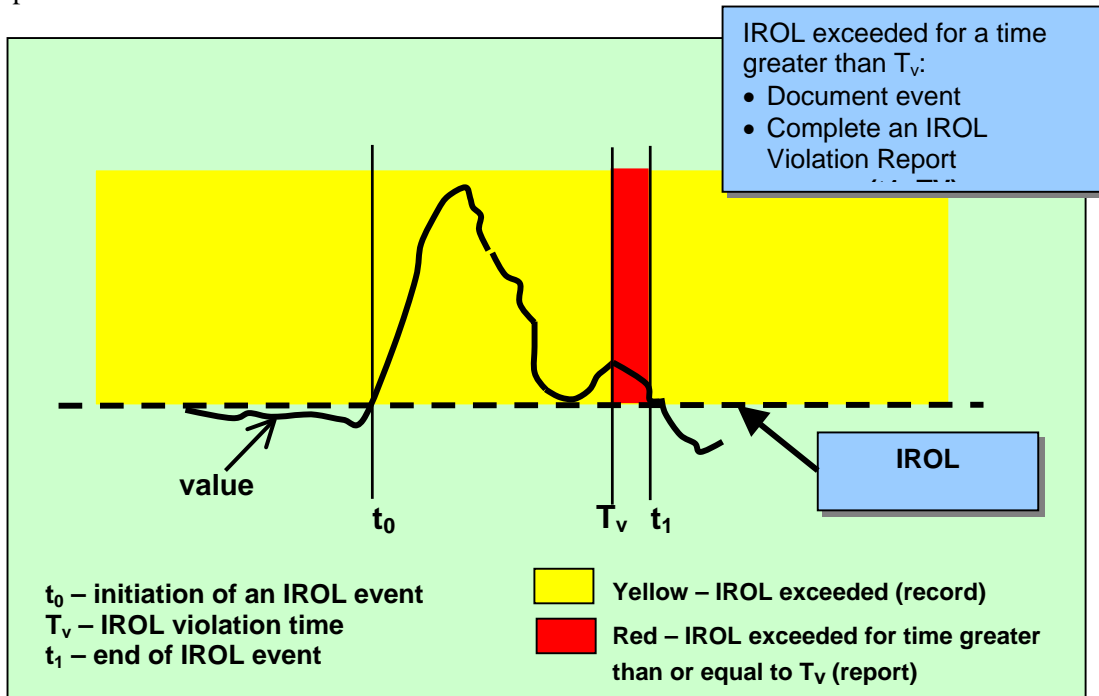


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**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<b>SAR Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>Southern Company Transmission Planning</i>	<b>Group Representative:</b> <i>Todd Lucas</i>	
	<b>Representative Phone:</b> <b>404-506-3564</b>	
	Representative Email: <b>telucas@southernco.com</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Todd Lucas</i>	<i>Southern Co</i>	<i>1</i>
<i>Joe Payne</i>	<i>Mississippi Power Company</i>	<i>3</i>
<i>Travis Koval</i>	<i>Southern Co</i>	<i>1</i>
<i>Bill Pope</i>	<i>Gulf Power Company</i>	<i>3</i>
<i>John Clark</i>	<i>Southern Co</i>	<i>1</i>
<i>David Johnson</i>	<i>Savannah Electric</i>	<i>3</i>

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### **Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

The term "Documentable Interconnection Reliability Operating Violation" is never used in the standard and has the same definition as "Interconnection Reliability Operating Event". Likewise, the term "Reportable Interconnection Reliability Operating Violation" is never used in the standard and has the same definition as "Interconnection Reliability Operating Violation". We suggest that the terms "Documentable Interconnection Reliability Operating Violation" and "Reportable Interconnection Reliability Operating Violation" be deleted from the list of definitions.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No

Comments It is not clear to us that the Transmission Operator would never be responsible for performing the requirements included in this standard. Similar to Standard 600, this requirement could apply to "the areas for which they are responsible".

### **Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201: The Transmission Owner should be added to this requirement if they can be held liable for violating IROL's.

### **Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202: The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203: The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205: The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:



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### 35. List any Regional or Interconnection Differences for this standard:

We do not currently know of any Regional or Interconnection Differences at this time. However, during the initial phasing in of standards each region may find adopting or developing a different approach provides increased reliability. Therefore, we believe that differences should be considered as they are identified in the future.

### 36. Notifying the Compliance Monitor

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

### 37. Any other comments on this standard?

This standard should not be brought to ballot until the Planning Authority is defined in the Functional Model since the Planning Authority is assigned requirements in this standard.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

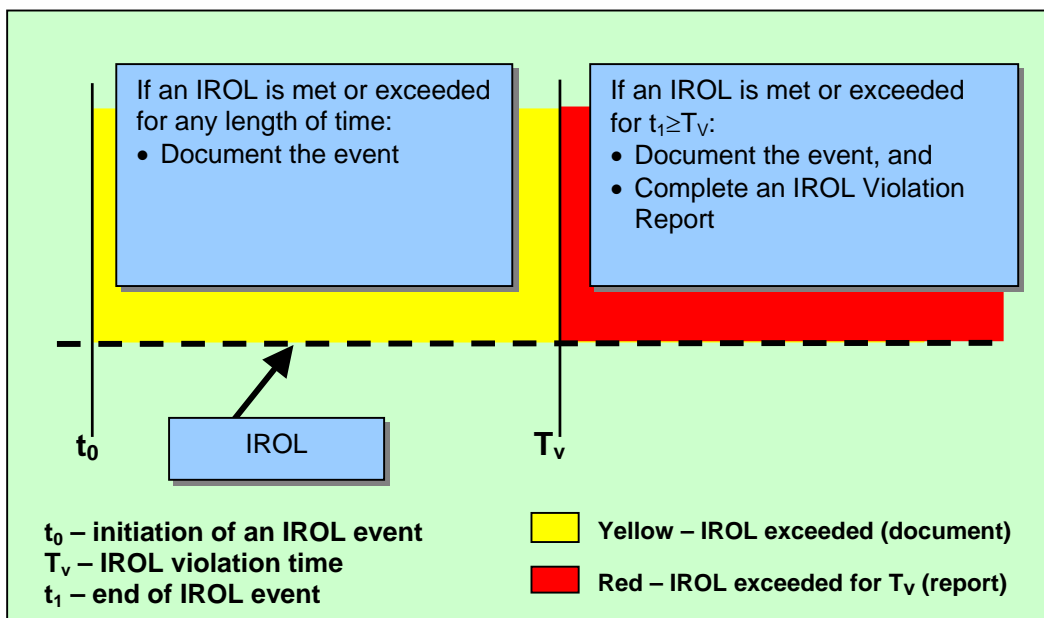
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

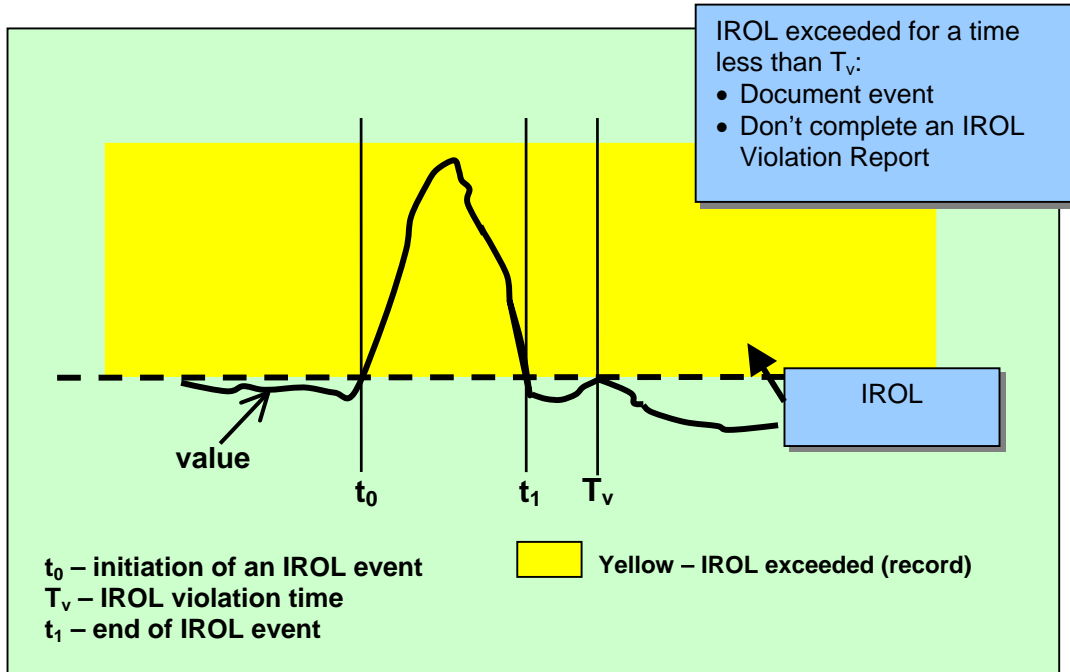
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

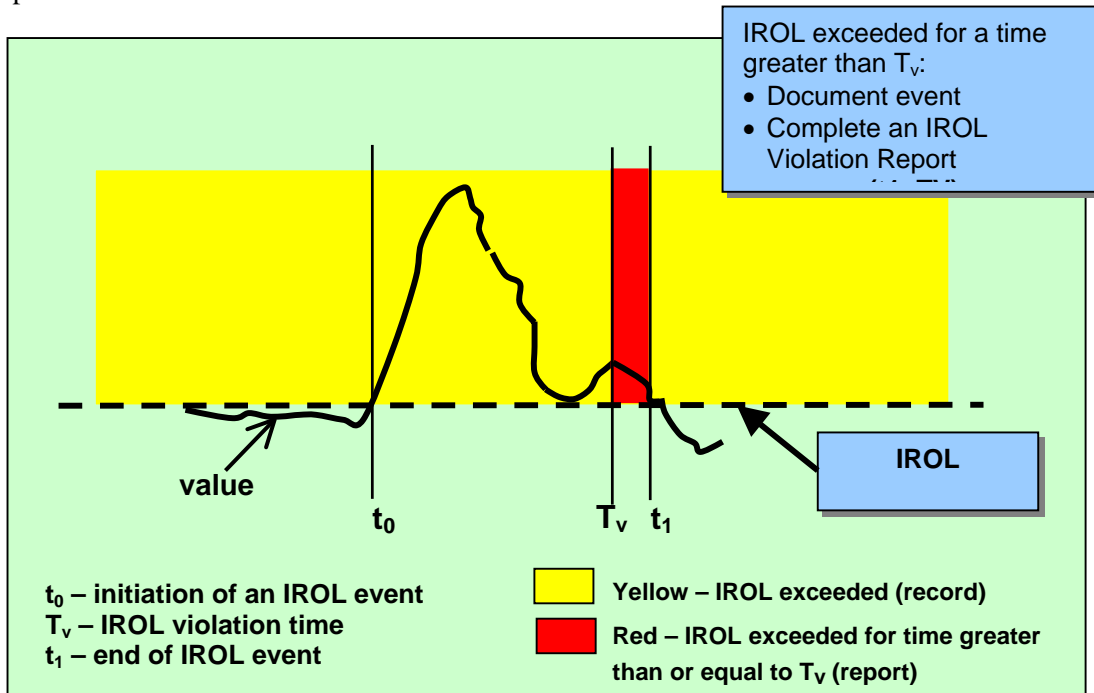


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
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**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment</b>
<b>Telephone</b>
<b>E-mail</b>

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
--

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>	
<b>Name of Group:</b> <i>Bonneville Power Administration TBL</i>	<b>Group Chair:</b> <i>James Murphy</i> <b>Chair Phone:</b> <i>360-418-2413</i> <b>Chair Email:</b> <i>jpmurphy@bpa.gov</i>

<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>James Murphy</i>	<i>BPA</i>	<i>1</i>
<i>Mike Viles</i>	<b>BPA</b>	<i>1</i>
<i>James Randall</i>	<b>BPA</b>	<i>1</i>
<i>Al Johnson</i>	<b>BPA</b>	<i>1</i>
<i>Jeff Newby</i>	<b>BPA</b>	<i>1</i>
<i>Jim Gronquist</i>	<b>BPA</b>	<i>1</i>
<i>Sylvia Wiggerhaus</i>	<b>BPA</b>	<i>1</i>
<i>Brian Tuck</i>	<b>BPA</b>	<i>1</i>
<i>Dick Spence</i>	<b>BPA</b>	<i>1</i>
<i>Tracy Rolstad</i>	<b>BPA</b>	<i>1</i>
<i>Steve Hitchens</i>	<i>BPA</i>	<i>1</i>

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
Operational Planning Analysis - There should be no time component to this definition. As long as it has been completed prior to when it is needed. Tv - Should include maximum response time.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201: Should remove planning authority to obtain a single point of responsibility. Also, Remove maximum response time and use just Tv, this will apply to the entire definition associated with Tv.

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203: 2.1.1 There should be no time frame, as long as the analysis is done prior to the need it shouldn't matter.

5.1 Remove - to indicate actions taken or directives issued to mitigate the instance. This additional verbage is not needed, the discription of the documentation is already covered in the requirements.

5.4 Remove at least once each day.

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204: 5.4 Remove minutes, TV may be seconds and TV is already a time period by definition.

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

In the Northwest, where there isn't a RTO in place, there seems to be some confusion on what current entity would be the RA? Who makes the decision or assigns who is the RA? We have also heard that a RA can direct TOP or others to do operational planning analysis, but we have not been able to find it in the Functional Model or this document. If that is the intent then it should be included in the Functional Model or this document. If you could direct us in these matters it would greatly improve our understanding of the document. Thank you for your help.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	David Thorne
<b>Organization</b>	Pepco
<b>Industry Segment # 1</b>	
<b>Telephone</b>	301-469-5211
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHIN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

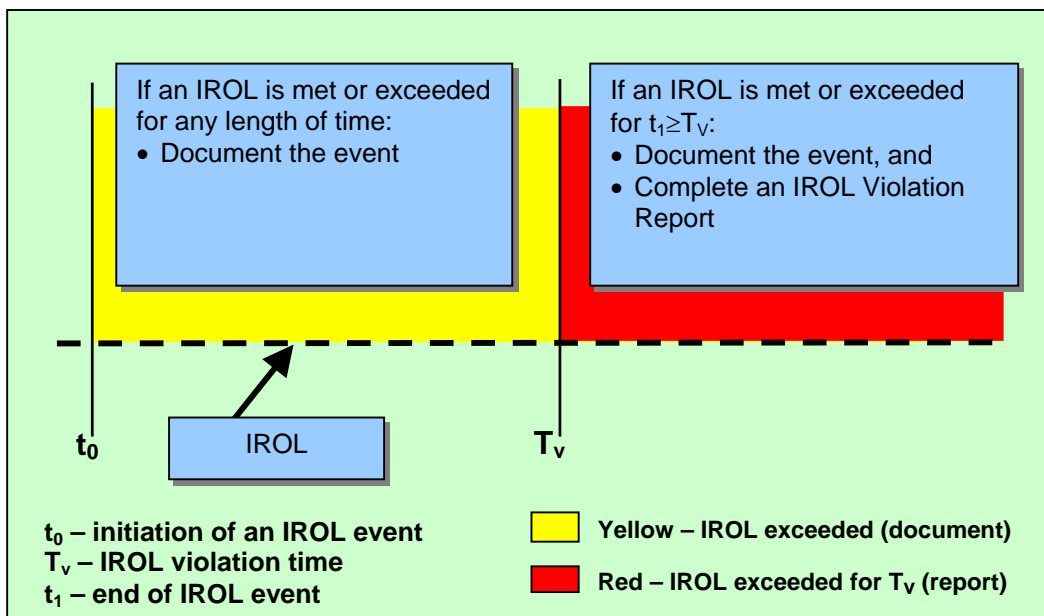
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

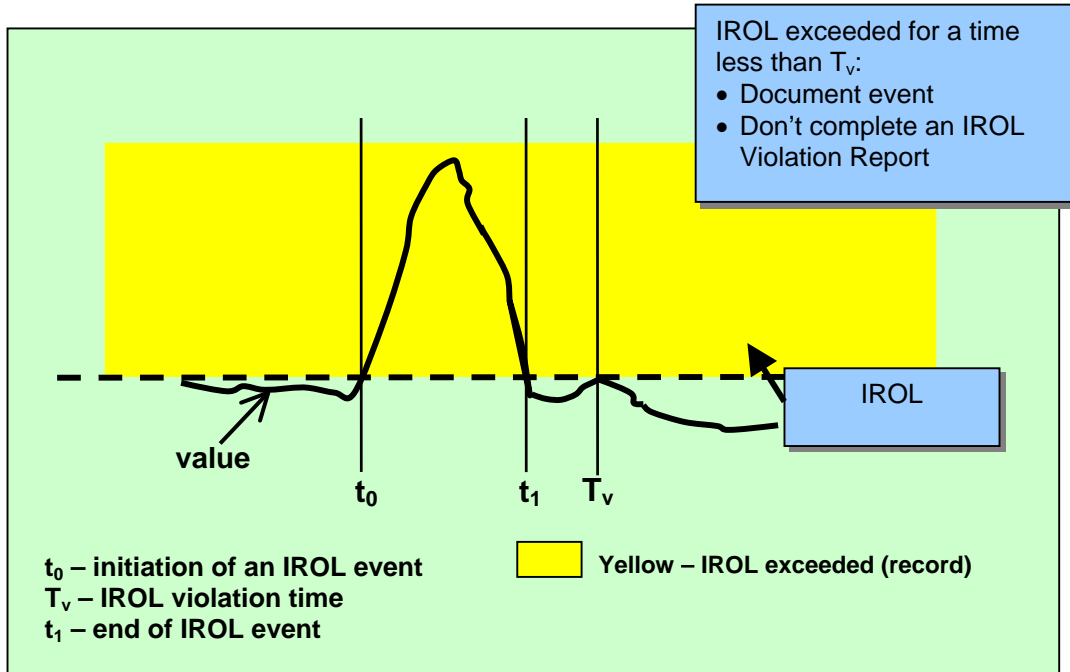
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

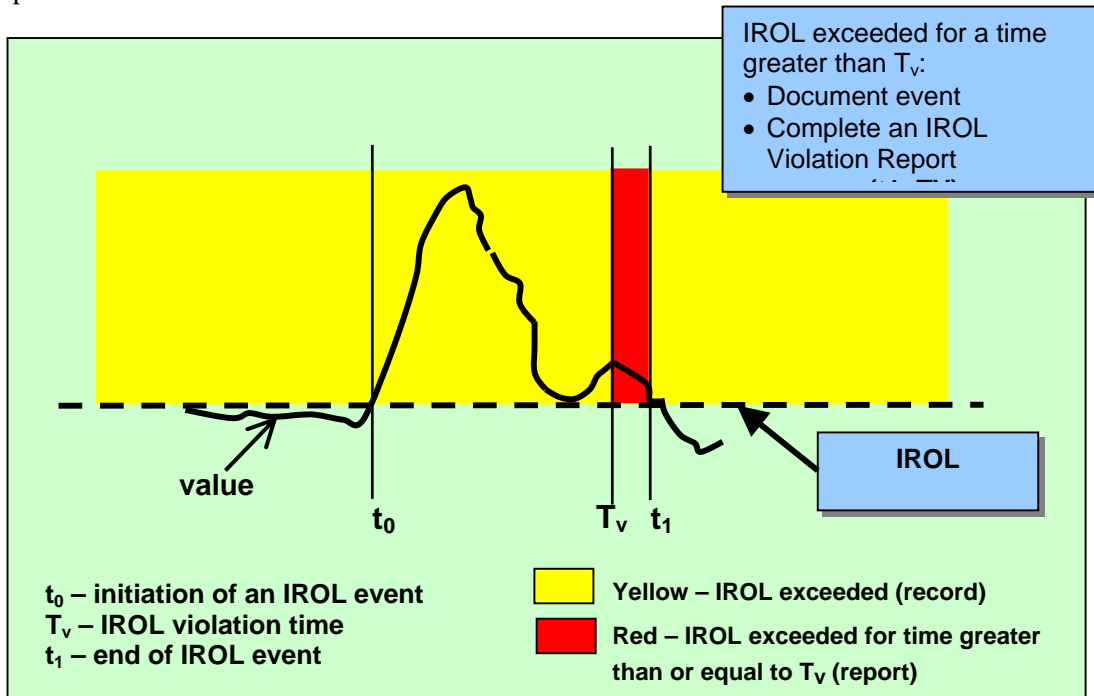


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

**I would suggest that the terms Documentable IROL Violation and IROL Event be combined in a single definition. Offer the following:**

**IROL Event: An instance.....for any length of time. These events are documentable IROL violations.**

**Similarly for IROL Violation and Reportable IROL Violation.**

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?

Yes                       No

8. Do you agree with the measures?

Yes                       No

9. Do you agree with the compliance monitoring process?

Yes                       No

10. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
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Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
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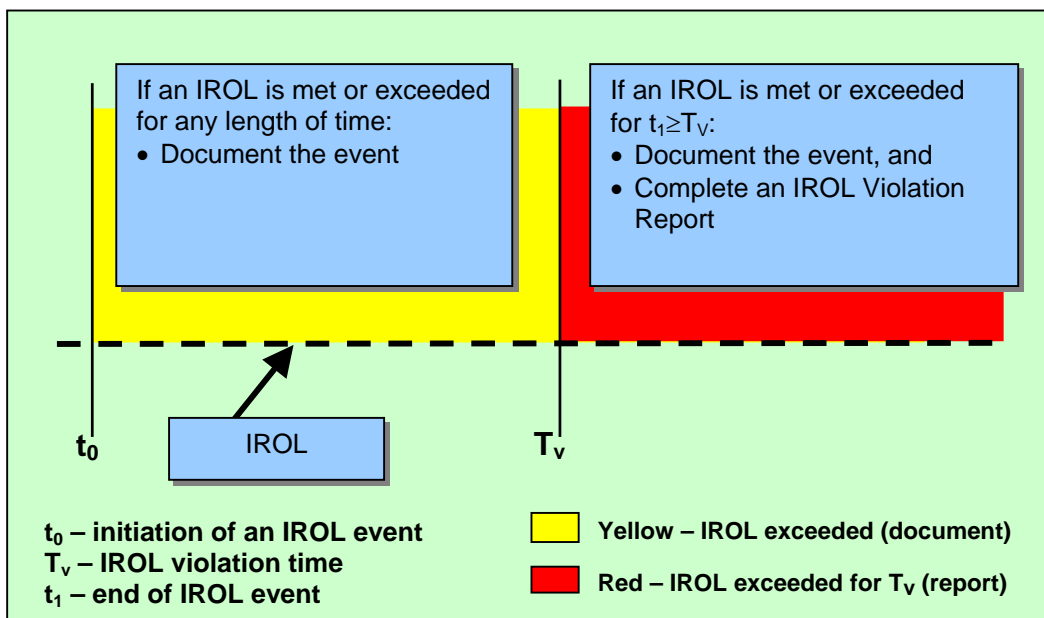
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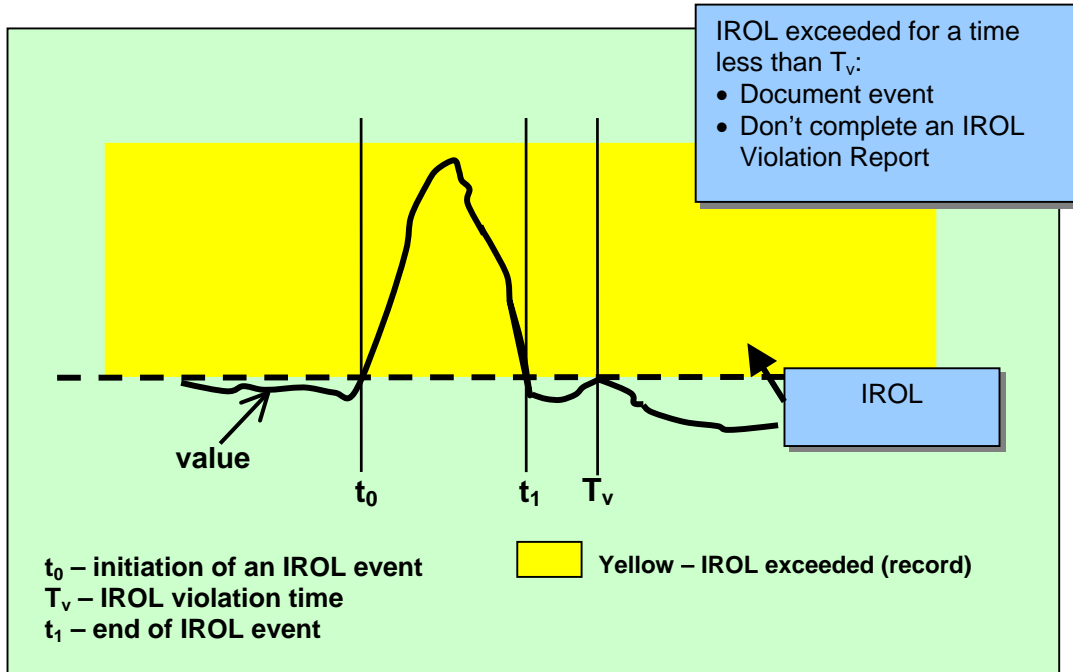
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

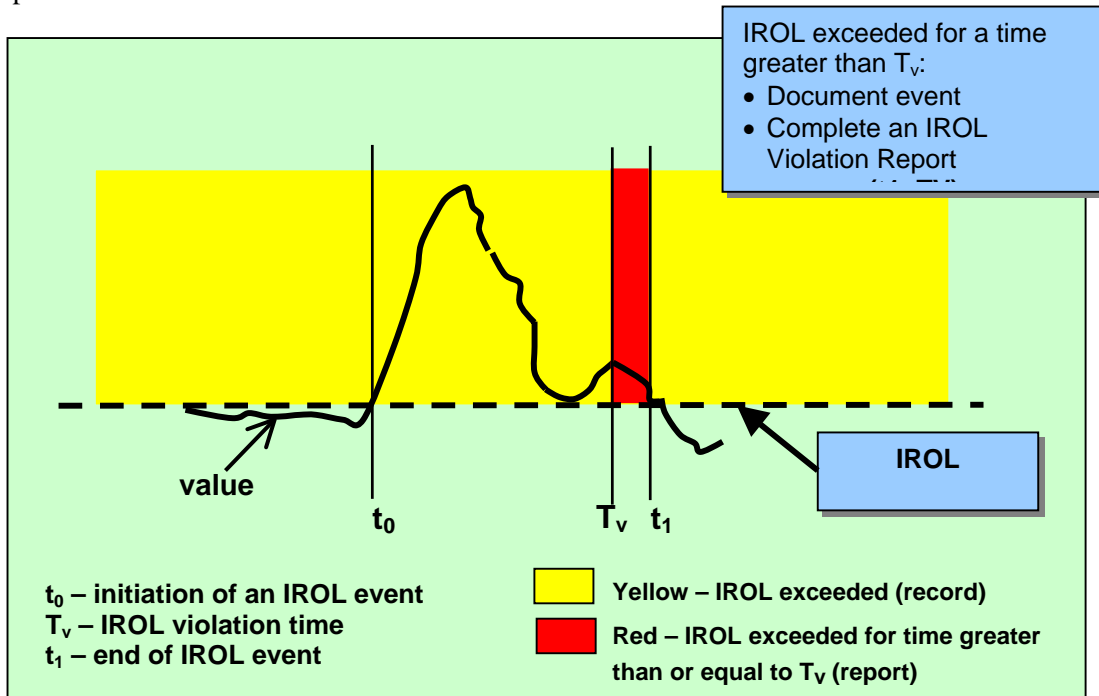


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

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- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
X Yes  No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
X Yes  No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
X Yes  No
4. Do you agree with the measures?  
X Yes  No
5. Do you agree with the compliance monitoring process?  
X Yes  No
6. Do you agree with the levels of non-compliance?  
X Yes  No

Comments about Requirement 201: We agree with the current list but wonder if their should be a category for an "incomplete list".

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
X Yes  No
8. Do you agree with the measures?  
X Yes  No
9. Do you agree with the compliance monitoring process?  
X Yes  No
10. Do you agree with the levels of non-compliance?  
X Yes  No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

- 11. Do you agree with the requirement?  
X Yes             No
  
- 12. Do you agree with the measures?  
X Yes             No
  
- 13. Do you agree with the compliance monitoring process?  
X Yes             No
  
- 14. Do you agree with the levels of non-compliance?  
X Yes             No

Comments about Requirement 203: We agree with this but think there should possibly be some room for "extenuating circumstances" (i.e., computer problems, in middle of restoration, etc.).

**Requirement 204 - Actions**

- 15. Do you agree with the requirement?  
X Yes             No
  
- 16. Do you agree with the measures?  
X Yes             No
  
- 17. Do you agree with the compliance monitoring process?  
X Yes             No
  
- 18. Do you agree with the levels of non-compliance?  
X Yes             No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

- 19. Do you agree with the requirement?  
X Yes             No
  
- 20. Do you agree with the measures?  
X Yes             No
  
- 21. Do you agree with the compliance monitoring process?  
X Yes             No
  
- 22. Do you agree with the levels of non-compliance?  
X Yes             No

Comments about Requirement 205:

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**Requirement 206 - Data Provision**

- 23. Do you agree with the requirement?  
X Yes             No
  
- 24. Do you agree with the measures?  
X Yes             No
  
- 25. Do you agree with the compliance monitoring process?  
X Yes             No
  
- 26. Do you agree with the levels of non-compliance?  
X Yes             No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

- 27. Do you agree with the requirement?  
X Yes             No
  
- 28. Do you agree with the measures?  
X Yes             No
  
- 29. Do you agree with the compliance monitoring process?  
X Yes             No
  
- 30. Do you agree with the levels of non-compliance?  
X Yes             No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

- 31. Do you agree with the requirement?  
X Yes             No
  
- 32. Do you agree with the measures?  
X Yes             No
  
- 33. Do you agree with the compliance monitoring process?  
X Yes             No
  
- 34. Do you agree with the levels of non-compliance?  
X Yes             No

Comments about Requirement 208: This does not allow for a directive to be challenged. It is either comply with the directive or don't and suffer the results. It would seem that you should have the right to request additional or further discussion surrounding the directive.

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
 The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
 E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

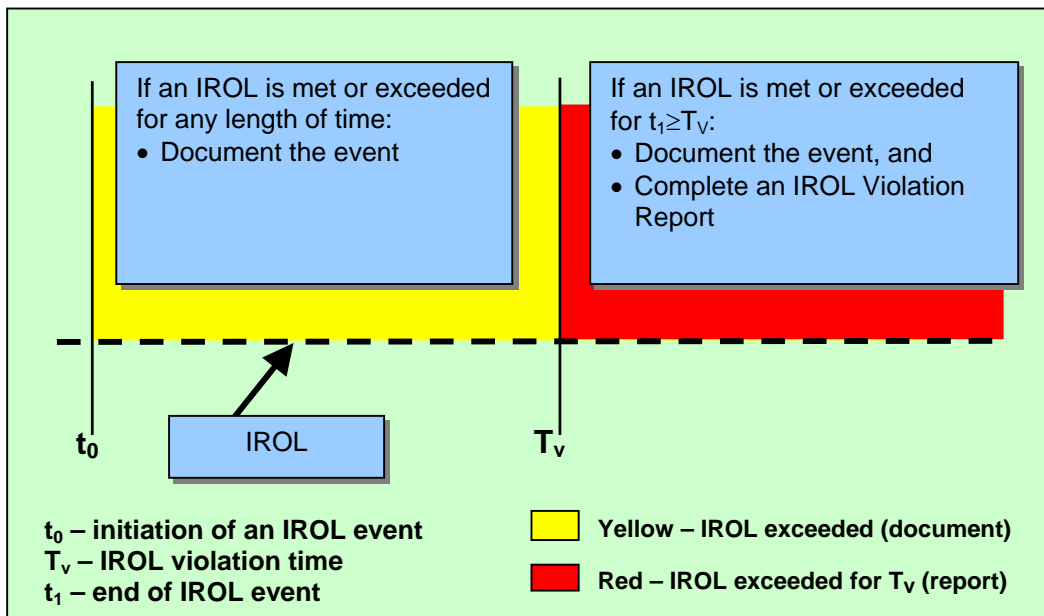
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

**Major Changes to this Standard:**

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

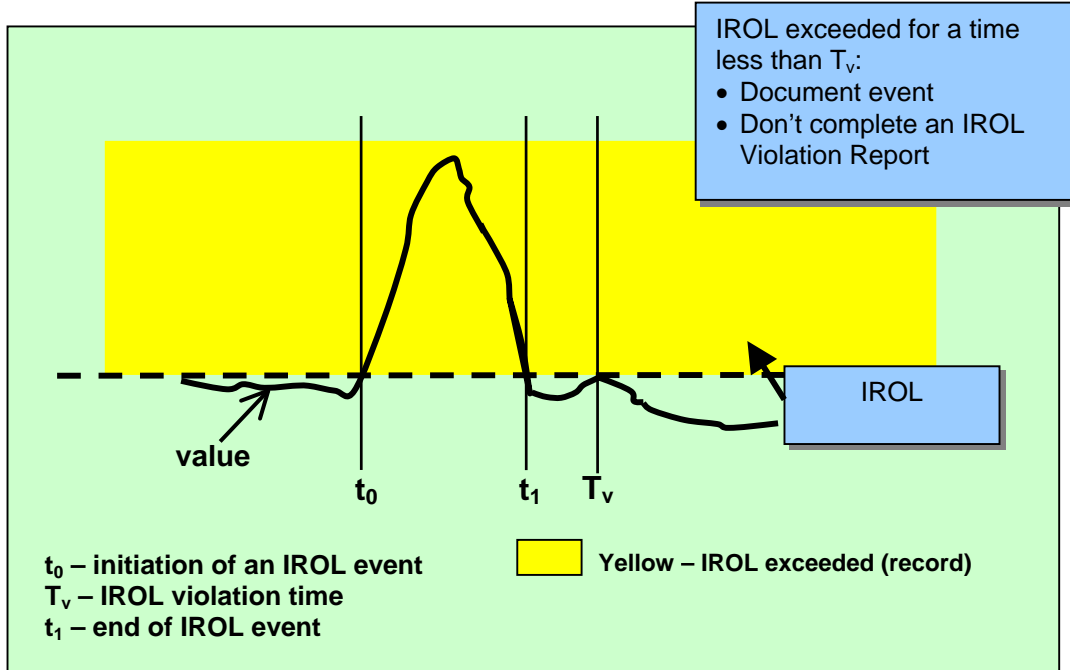
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

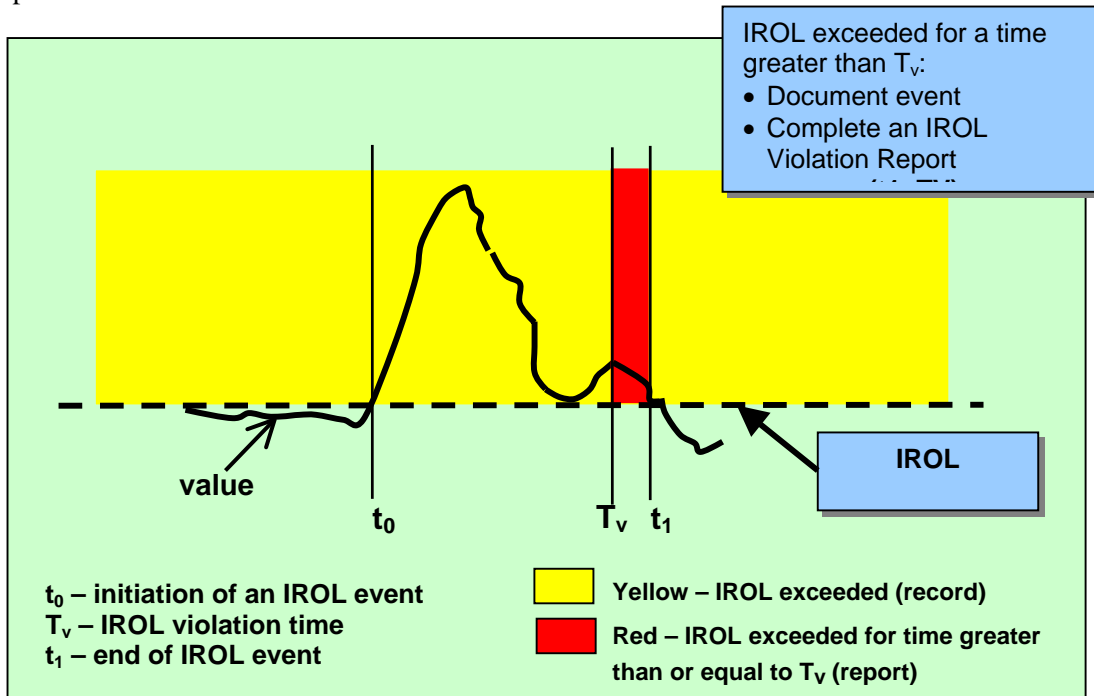


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
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**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

- Operational Planning analyses are conducted for time periods up to 13-months into the future. Please revise the definition as follows:

Operational Planning Analysis: “ .... An operational planning analysis is done for the next day’s operation and up to 13-months ahead of the expected conditions.”

- The Transmission Owner has fiduciary responsibility for his owned facilities. Therefore he has ultimate responsibility and liability for owning, maintaining and operating his facilities to protect his stockholders’ and lending institutions’ investments. The Transmission Owner then is ultimately responsible for establishing system operating limits, including Tv, for his facilities. Therefore, the definition of Tv should be revised to:

“Tv: The violation time associated with a limit that is determined by the Transmission Owner for equipment-based limits, and by the Reliability Authority and Planning Authority for system-based limits.”

- The responsibilities of the RA are to “monitor” the system, not “control” the system. Therefore, we suggest the following change:

Reliability Authority Area: A defined electrical system bounded by interconnection (tie-line) metering and telemetry monitored by a single reliability authority.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments: Given the significant changes to this draft standard, the RA is now monitoring the facilities with identified and documented IROLs. We do not agree with this blanket statement until we are able to review all the requirements of all the functional entities. For instance, this draft standard does not recognize that the TO has fiduciary responsibility to his stockholders’ and lending institutions’ investments and that neither NERC standards, nor the Functional Model, can take that responsibility and liability away. This fiduciary responsibility requires the TO establish thermal ratings, and associated Tv, for its equipment and then monitor that equipment. If those thermal ratings are the lesser of the thermal, stability or voltage limits, then the TO has established the IROL limit. Therefore, we suggest the requirements identified in this standard are not redundant requirements but are requirements met by several entities (functions), not met by one entity (function).

Also, the requirements should be changed to the TO, from the TOP. The TO may delegate some parts of that function to another entity, at the TO’s option. However, for the purposes of this standard, the Transmission Owner must be added to all parts of this standard.

In addition, what functional entity is monitoring all the transmission facilities with system operating limits not included in the IROLs? What functional entity is monitoring all the other transmission

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facilities? The answer is that the TO, and maybe the TOP, must be added to the list of entities (functions) monitoring the real-time system to ensure all the transmission facilities are being operated within limits.

If the TO is not added to this standard, then there is a major piece missing to the monitoring of the power system and the reliability of the system. That missing piece is the monitoring of the system operating limits.

Therefore, another standard needs to be written with a title something like – “Operate Within Limits – All Transmission and System Operating Limits Other Than Interconnection Reliability Operating Limits”.

### **Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO, RA, PA, TSP, and TOP, and recommend all functional entities be identified in Standard 201 part 1.1 and 1.2.

Standard 201 part 1.2.1 should have the “RA or PA” replaced with the “Transmission Owner or Transmission Operator” as the functional entities responsible for establishing the maximum response time (Tv) for any IROL that does not already have one.

In the measures sections 2.1 and 2.2, replace the “entity responsible” with the “TO, RA, PA, TSP, and TOP” as the entities establishing a list of IROLs.

Measures section 2.1.1 should have the “entity responsible” replaced with the “TO” being responsible for establishing the maximum value of Tv.

In the Compliance Monitoring Process section, the “entity responsible” should be replaced with the “Transmission Owner” in each occurrence of that term.

### **Requirement 202 - Monitoring**

7. Do you agree with the requirement?



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Yes                       No

8. Do you agree with the measures?

Yes                       No

9. Do you agree with the compliance monitoring process?

Yes                       No

10. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 202:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 202 be replaced with "reliability authority and transmission owner".

In addition, it appears from the wording of this draft standard Section 202 Monitoring, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:

1.1. The reliability authority shall monitor real-time system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.

**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?

Yes                       No

12. Do you agree with the measures?

Yes                       No

13. Do you agree with the compliance monitoring process?

Yes                       No

14. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 203:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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occurrence of the term “reliability authority” in all of this section 203 be replaced with “reliability authority and transmission owner”.

In addition, it appears from the wording of this draft standard Section 203 Analysis and Assessments, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:

- 1.1. The reliability authority shall perform operational planning analyses to verify that the planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.

The wording of Item 1.2 should also be revised to make it clear the RA and TO verify the power system operation is not exceeding IROL limits:

- 1.2. The reliability authority shall perform real-time assessments to verify that the power system is not exceeding any interconnection reliability operating limits. The transmission owner shall perform real-time assessments to verify its equipment is not exceeding any interconnection reliability operating limits.

**Requirement 204 - Actions**

- 15. Do you agree with the requirement?  
 Yes                       No
- 16. Do you agree with the measures?  
 Yes                       No
- 17. Do you agree with the compliance monitoring process?  
 Yes                       No
- 18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

- 19. Do you agree with the requirement?  
 Yes                       No
- 20. Do you agree with the measures?  
 Yes                       No
- 21. Do you agree with the compliance monitoring process?  
 Yes                       No

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22. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 205:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 205 be replaced with "reliability authority and transmission owner".

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 206 be replaced with "reliability authority and transmission owner".

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 207 be replaced with "reliability authority and transmission owner".

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

We believe the wording of this draft standard Section 208 Reliability Authority Directives, 1. Requirements, Item 1.1 is restricted to too few entities, needs to be expanded to encompass all functions and users of the power system, should recognize the RA is required to issue directives consistent with applicable tariffs and contract, and the RA is required to use Good Utility Practices. This requirement must be reworded:

1.1. The reliability authority shall use applicable tariffs, contracts, and Good Utility Practice when directing use of the power system, and all users of the power system shall follow the reliability authority's directives to:

1.1.1.1. Prevent instances where interconnection reliability operating limits may be exceeded

1.1.1.2. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded

**35. List any Regional or Interconnection Differences for this standard:**

None

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

- Two definitions should be changed based on our comments:

**Reliability Authority Area:** A defined electrical system bounded by interconnection (tie -line) metering and telemetry monitored by a single reliability authority.

**T<sub>v</sub>:** The violation time associated with a limit that is determined by the Transmission Owner for equipment-based limits and by the Reliability Authority and the Planning Authority for system-based limits.

- We are becoming increasingly concerned about this standard development process. This and other standards are being developed based on certain definitions and assumptions contained in the Function Model. These “standards” will become fixed such that the industry will be held accountable to and measured by these standards. However, the Functional Model and the definitions contained in that revised model are changing and will not necessarily be the same as those used to develop the standards, like this Operate Within Limits. What is the process for reviewing, revising and implementing changes to the Functional Model, and the impact of those changes on all these standards that have been developed based on the old Functional Model? Are the changes to the Functional Model being vetted by all industry participants before implementation? What is the process to revise these standards prior to implementing changes to the Functional Model?



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

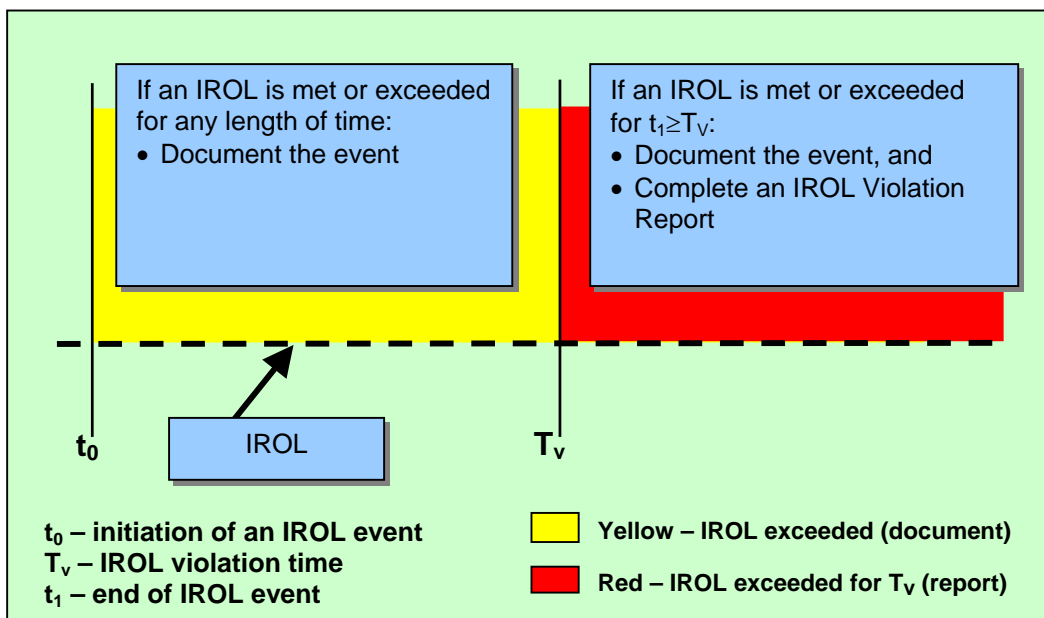
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

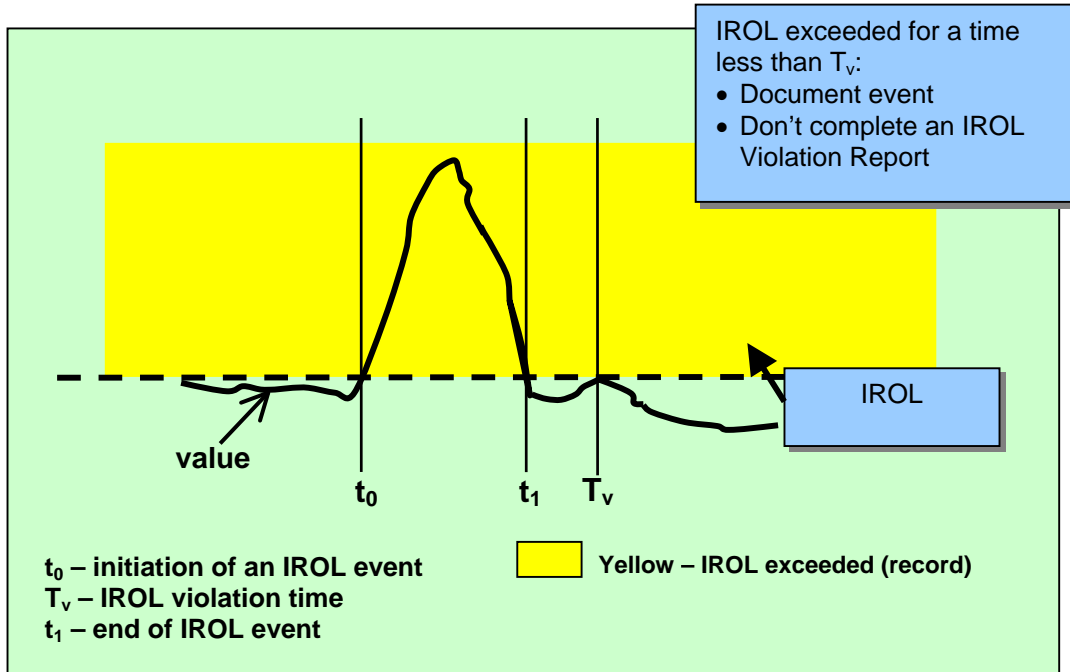
When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.



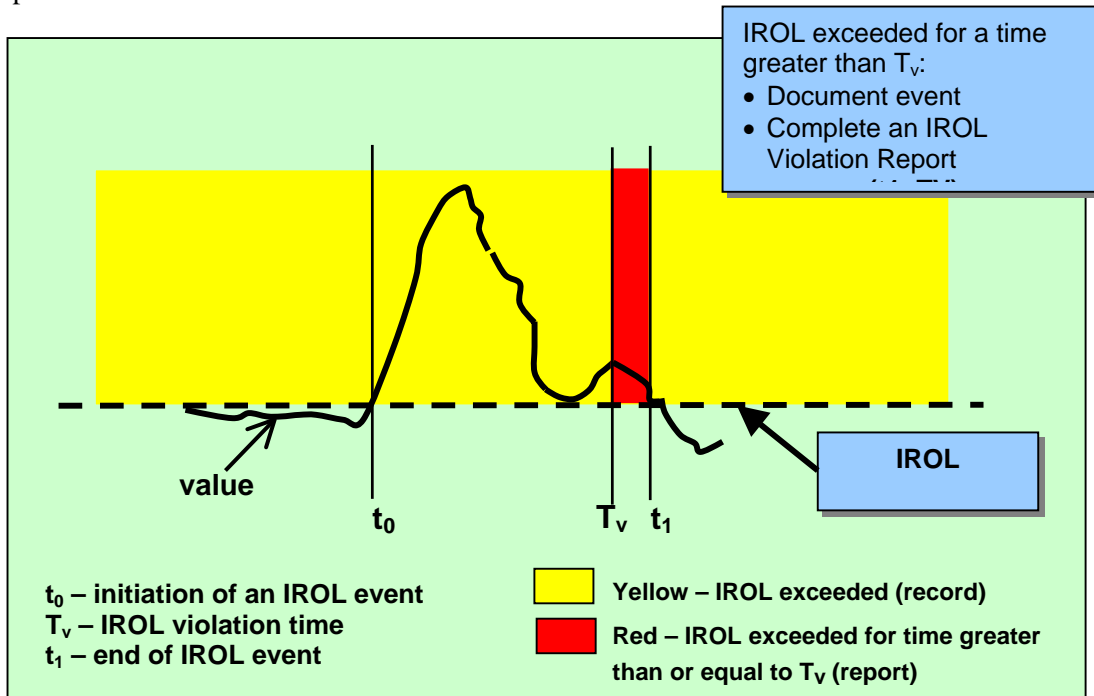


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>MAPP Regional Reliability Council, assisted by its Operations Subcommittee (members listed below).</i>	<b>Group Chair:</b> <i>Lloyd Linke</i> <b>Chair Phone:</b> 605-882-7500 <b>Chair Email:</b> lloyd@wapa.gov	
<b>List of Group Participants that Support These Comments:</b>		
Name	Company	Industry Segment #
<i>Allan Silk</i>	<i>Manitoba Hydro</i>	<i>2</i>
<i>Paul Brune</i>	<i>Nebraska Public Power District</i>	<i>2</i>
<i>Todd Gosnell</i>	<i>Omaha Public power District</i>	<i>2</i>
<i>Paul Koskela</i>	<i>Minnesota Power</i>	<i>2</i>
<i>Larry Larson</i>	<i>Otter Tail Power</i>	<i>2</i>
<i>Darrick Moe</i>	<i>WAPA</i>	<i>2</i>
<i>Dick Pursley</i>	<i>Great River Energy</i>	<i>2</i>
<i>Martin Trence</i>	<i>Xcel Energy</i>	<i>2</i>
<i>Joseph Knight</i>	<i>MAPPCOR</i>	<i>2</i>

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### Background

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

Operational Planning Analysis – Omit the word “peak” in the first sentence as a qualifier for load. There may be instances where reliability is compromised during non-peak load conditions. The analysis should be done over a range of loads based on forecasts.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments This issue is addressed well in this version.

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201: The requirement to produce a list of IROLs must include the notion that if the failure to identify an existing IROL results in the system experiencing cascading outages, instability, or uncontrolled separation - a consequence occurs. The requirement, as written, provides no monitoring or non-compliance provisions for the failure to properly identify an IROL – an entity is compliant if they have a list of one IROL – even if in the last year they caused multiple bulk reliability catastrophes due to not identifying other IROLs on their system.

The order of 2.1 and 2.2 should be swapped to agree with 1.1 and 1.2 order.

### Requirement 202 - Monitoring

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?

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Yes                       No

Comments about Requirement 202:

**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?

Yes                       No

12. Do you agree with the measures?

Yes                       No

13. Do you agree with the compliance monitoring process?

Yes                       No

14. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?

Yes                       No

16. Do you agree with the measures?

Yes                       No

17. Do you agree with the compliance monitoring process?

Yes                       No

18. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 204:

The Measure 2.1.1 should include the explicit provision that this log is a publicly available document. The actions so logged by the RA should be independent and consistent, and the log is one way of enhancing visibility to assure this is the case.

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes                       No

20. Do you agree with the measures?

Yes                       No

21. Do you agree with the compliance monitoring process?

Yes                       No

22. Do you agree with the levels of non-compliance?

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Yes                       No

Comments about Requirement 205:

**Requirement 206 - Data Provision**

23. Do you agree with the requirement?

Yes                       No

24. Do you agree with the measures?

Yes                       No

25. Do you agree with the compliance monitoring process?

Yes                       No

26. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 206: Provisions should be made to excuse the temporary loss of real-time data due to technical difficulties, such as telecommunications interruptions.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?

Yes                       No

28. Do you agree with the measures?

Yes                       No

29. Do you agree with the compliance monitoring process?

Yes                       No

30. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

Yes                       No

32. Do you agree with the measures?

Yes                       No

33. Do you agree with the compliance monitoring process?

Yes                       No

34. Do you agree with the levels of non-compliance?

Yes                       No



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Comments about Requirement 208: Please clarify if the intention here is for entities to comply with the RAs directives in cases that those directives are proscribed by an existing operating guide – or in **all** cases? If a Reliability Authority is issuing an order that conflicts with a standing operating guide, then the RA must first explicitly/formally invalidate the guide prior to issuing the directive. Please provide information regarding how liability will be assigned for actions that are found to be improper that result in harm.

### 35. List any Regional or Interconnection Differences for this standard:

### 36. Notifying the Compliance Monitor

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

#### Comments

**Relaying on a centralized compliance document would result in a compliance document that could never be stabilized due to too many changes being required.**

### 37. Any other comments on this standard?

The Sanctions Subsection (number 6) for each heading should define the MW value to be used when determining monetary penalties if an entity is found to be non-compliant, or clarify that the fixed level sanctions should be used and not the per-MW sanctions.

Is there a reason why NERC defined terms are not capitalized throughout the standard?

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

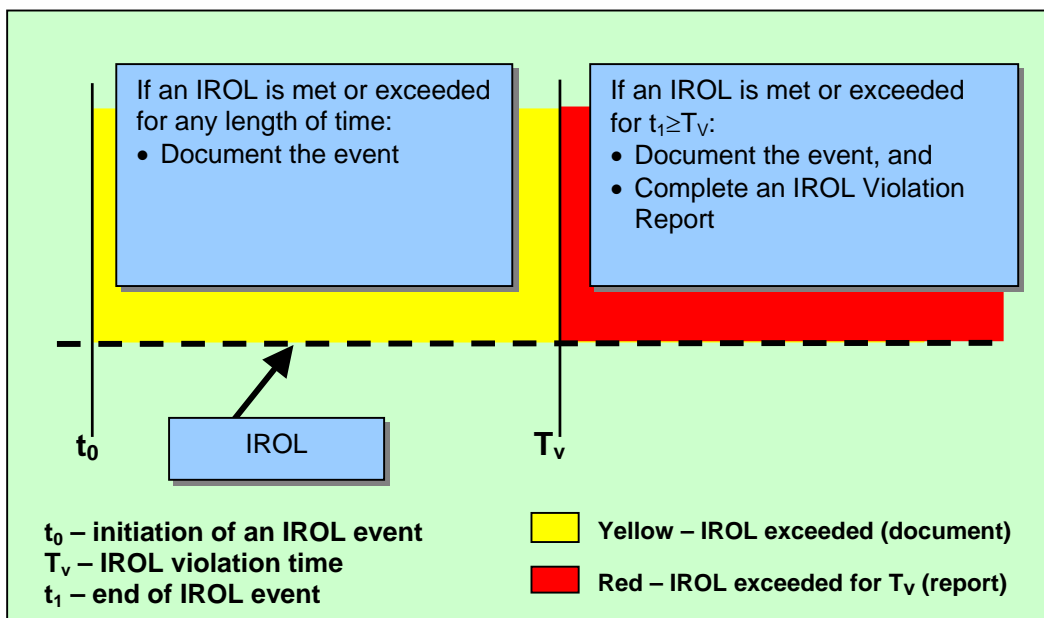
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

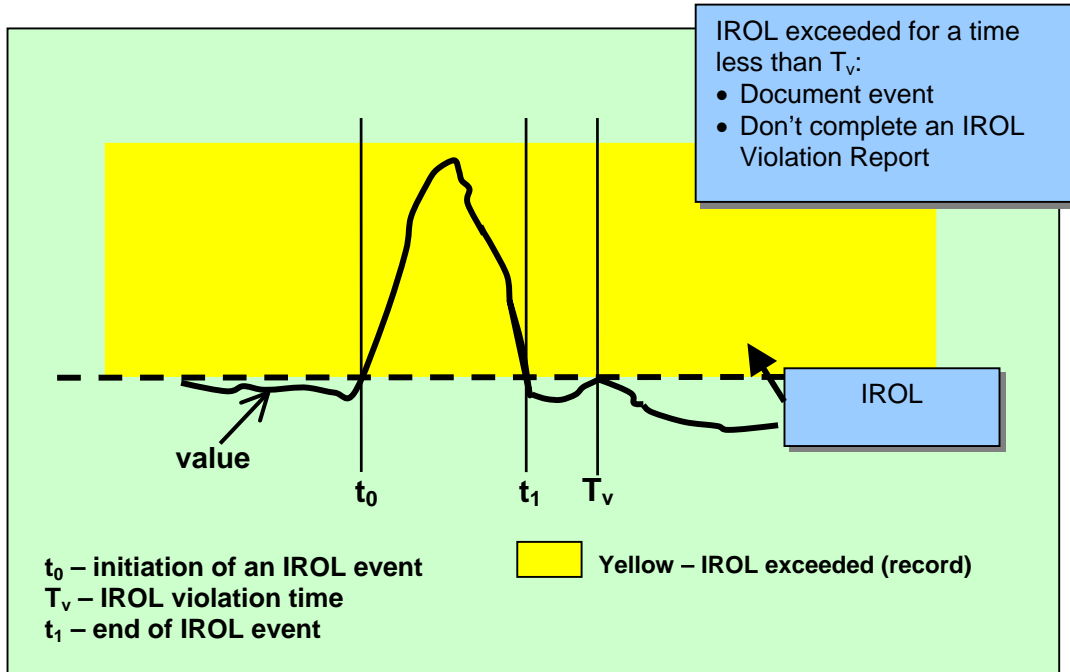
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

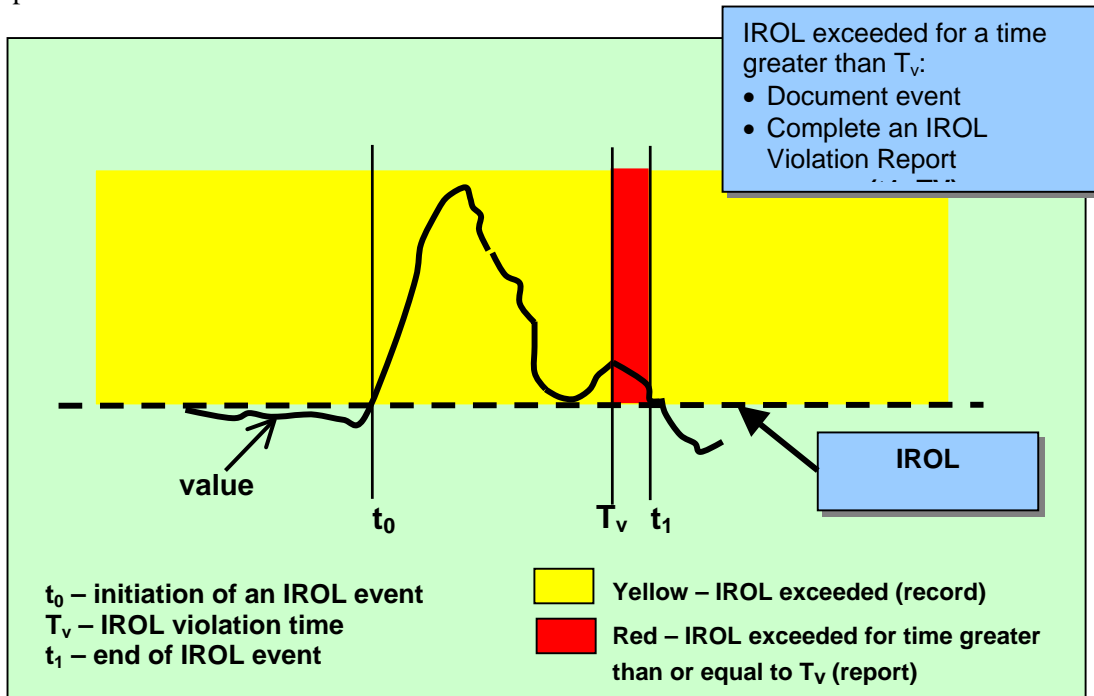


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



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**Background**

1. Do you agree with the definitions provided in the front of this standard?

Yes                      X  No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

1. "Documentable Interconnection Reliability Operating Limit Violation" and "Interconnection Reliability Operating Limit Event" have identical definitions. Two terms having the same definition leads to confusion. Eliminate one of the terms and modify Standard accordingly.
2. "Interconnection Reliability Operating Limit" definition
  - a. Second sentence contains a reporting requirement for the Reliability Authority. A definition should simply define the term. Required actions are to be contained in the standard itself. Delete sentence two.
  - b. First sentence is confusing it that it appears to imply that there just may be certain situations where "instability, uncontrolled separation, or cascading outages" may NOT "adversely impact the reliability of the bulk transmission system". Assuming this is not the intent, consider rewording as:
    - i. Interconnection Reliability Operating Limit: A System Operating Limit on the Bulk Electric System that if exceeded, could lead to instability, uncontrolled separation, or cascading outages.
3. Real-time Monitoring: Standard 202 implies that "Real-time Monitoring" is an activity to be performed as opposed to equipment in place that simply facilitates that function. Consider rewording as:
  - i. Real-time Monitoring: Draw conclusions from various Real-time Data sources.
4. Operational Planning Analysis: The last sentence specifies that such an analysis is performed up to seven days ahead of expected conditions. Sentence is unnecessary and confusing. Neither 203.1 or 203.2 does not specify a time horizon for the Operational Planning Analysis beyond the 'next day'.
5. Real-time: definition not necessary, consider deleting.
6. Real-time Data: Consider rewording as " Readily available measured values of existing system parameters, state estimator values....."
7. Tv: Definition confusion. Consider: Minimum time of a system parameter that exceeds an Interconnection Reliability Operating Limit that requires a report to the Compliance Monitor.
8. Real-time Assessment: The second sentence is not needed. Required actions are to be contained in the standard itself. Additionally, real-time assessments can be performed others, not just the RA.
9. "Interconnection Reliability Operating Limit Violation" and "Reportable Interconnection Reliability Operating Limit Violation" have the same definition. Two terms having the same definition leads to confusion. Eliminate one of the terms and modify Standard accordingly.
10. Self-certification: Remove the second and third sentences. They are editorial comments that do not belong in a definition. If the comments are relevant to a particular standard, then they belong in the Compliance Monitoring Process section of the Standard.
11. Transmission Operator: The definition given sounds more like the definition of a Transmission Service Provider. The Functional Model Review Task Force in their January 1, 2003 Group Report defined Transmission Operator as: "The entity that operates the transmission facilities and executes switching orders."

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments



**Requirement 201 - Interconnection Reliability Operating Limit Identification**

- 3. Do you agree with the requirement?  
 Yes                      X  No
- 4. Do you agree with the measures?  
X  Yes                       No
- 5. Do you agree with the compliance monitoring process?  
 Yes                      X  No
- 6. Do you agree with the levels of non-compliance?  
 Yes                      X  No

Comments about Requirement 201:

- 1. In 201.1.2.1 Consider: The Reliability Authority or Planning Authority shall establish a maximum response time (Tv) for all Interconnected Reliability Operating Limits.
- 2. In 201.5.4 "States NO list of Interconnected Reliability Operating Limits or NO list of facilities .....". Should it be "Incomplete" lists?
- 3. Defined terms should be capitalized, such as "Reliability Authority", "Interconnected Reliability Operating Limits", etc.
- 4. Who is the ultimate arbiter of what is the "complete list" of facilities and limits? Should the RA and PA be required to have studies available that support their IROLs or is just having a list of facilities with associated limits enough? If having studies is to be required, then what is the penalty if studies show other facilities should have had an IROL but the RA or PA did not specify a limit for that facility? Is the real concern identifying what facilities have an IROL or is it that we want to ensure that the RA does not operate in violation of identified IROLs? This version of the Standard has requirements for both, but leaves a lot of unanswered questions.
- 5. 201.1.1: How will the Reliability Authority and Planning Authority identify and document the facilities subject to operating limits jointly? What is the course of action if there is disagreement? Which functional entity has the final say? We believe the Standard should specify only one entity to be ultimately responsible. For this requirement we suggest it should be the RA. Suggested rewording: "The Reliability Authority in coordination with the Planning Authority shall identify and document . . ."
- 6. 201.1.2: Suggested rewording: "The Reliability Authority in coordination with the Planning Authority shall identify . . ."
- 7. 201.1.2.1: Suggested rewording: "The Reliability Authority in coordination with the Planning Authority shall identify a maximum . . ."
- 8. 201.4.2: We believe the performance-reset period should be 12 months from the date of the infraction not one calendar year.
- 9. 201.5 Levels of Non-compliance: We disagree with the SDT's perspective that there is no gray area where partial credit is appropriate. Requirement 201 is a documentation and communication requirement. The RA needs to have documented IROLs and have such documentation of limits available to the RA system operators. As such this requirement is similar to the communication requirements 602, 604, and 606 in the "Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard." In those requirements, it is proposed that there be multiple levels of non-compliance. We believe that is prudent and should be the case with this requirement too. As presently stated, if an RA has an incomplete list of IROLs or incomplete list of facilities requiring IROLs, he is still compliant. The RA is only non-compliant if they have "no list." We believe this is too lenient. We suggest that the levels of non-compliance should address both completeness (all identified facilities have associated IROL and Tv value) and quality (all appropriate facilities have been identified and the limits and Tv values are reasonable).

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**Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
X  Yes                       No
- 8. Do you agree with the measures?  
X  Yes                       No
- 9. Do you agree with the compliance monitoring process?  
 Yes                              X  No
- 10. Do you agree with the levels of non-compliance?  
X  Yes                             No

Comments about Requirement 202:

- 1. For clarity consider rewording 202.1.1 as “The Reliability Authority shall perform Real-time Monitoring of applicable operating parameters to determine if.....”
- 2. Defined terms should be capitalized, such as “Reliability Authority”, “Interconnected Reliability Operating Limits”, etc.
- 3. 202.4.2: The performance reset period should be 12 months from the time of the infraction not one calendar year.
- 4. Suggest combining 202.4.3 and 202.4.3.1 and rewording as: “The Reliability Authority shall have display(s) with real time data associated with interconnection reliability operating limits.

**Requirement 203 - Analyses and Assessments**

- 11. Do you agree with the requirement?  
 Yes                              X  No
- 12. Do you agree with the measures?  
 Yes                              X  No
- 13. Do you agree with the compliance monitoring process?  
X  Yes                             No
- 14. Do you agree with the levels of non-compliance?  
X  Yes                             No

Comments about Requirement 203:

- 1. Wording of 203.1 implies that a specific favorable outcome of Operational Planning Analyses and Real-time Assessments is required. Consider reword as:
  - a. 203.1.1 The Reliability Authority shall perform Operational Planning Analyses to assess if the planned Bulk Electric System operations will result in any of its Interconnection Reliability Operating Limits being exceeded. The Reliability Authority will modify planned operations if analyses indicate such a violation.
  - b. 203.1.2 The Reliability Authority shall perform Real-time assessments to assess if any Interconnection Reliability Operating Limits are being exceeded. Any identified violated will be addressed immediately.
- 2. Defined terms should be capitalized, such as “Reliability Authority”, “Operational Planning Analyses”, “Interconnected Reliability Operating Limits”, etc
- 3. 203.4 Compliance Monitoring Process: Today we require the Reliability Coordinators to have available for review and investigation study case results and related documentation for a rolling three month period (refer to compliance template P9 T1). Maintaining this compliance

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requirement may prove beneficial during investigations due to complaints and would not add any additional reporting burden beyond today's process.

### **Requirement 204 - Actions**

15. Do you agree with the requirement?  
X  Yes                       No
16. Do you agree with the measures?  
X  Yes                       No
17. Do you agree with the compliance monitoring process?  
X  Yes                       No
18. Do you agree with the levels of non-compliance?  
X  Yes                       No

Comments about Requirement 204:

1. Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc

### **Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                      X  No
20. Do you agree with the measures?  
 Yes                      X  No
21. Do you agree with the compliance monitoring process?  
X  Yes                       No
22. Do you agree with the levels of non-compliance?  
X  Yes                       No

Comments about Requirement 205:

1. Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc
2. This section should only deal with the data specification. The data collection portion should either be its own section or be combined with section 206 at a minimum. Items 1.3 and 2.3 of this section should be a part of that new section or merged into section 206.
3. The standard as it is written assumes that 100 percent of the data that is required for real-time monitoring, operational planning analyses and real-time assessments can be collected 100 percent of the time. The availability of real-time data is subject to many controllable and uncontrollable factors of both the Reliability Authority and the entity providing the data.
4. The Reliability Authority and the entity providing the data should have documented protocols for the acceptable level of data quality and availability specific to the data type, need, and other factors. This information is outside the scope of this standard, but this standard should ensure that the documentation does exist and the requirements established in the protocols are enforced. This will enable the requirement of the entity to provide the data sufficient for the

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Reliability Authority to perform its functions and require the Reliability Authority to report any non-compliance without the ambiguity of what is an acceptable failure or not.

5. What is the dispute resolution process for disagreements with requirements established by the Reliability Authority? Can the entity say they cannot provide the data requested and justify why not to some group or entity? We suggest that there should be a provision that the data requested by the RA is reasonable and needed and that the NERC Regional Reliability Councils will be the arbiter for disputes.
6. We continue to maintain that there needs to be an industry minimum specification for the type of data required, similar to Appendix 4B "Electric System Security Data."
7. There should be a requirement that the data specification, including scan rates, data transmission rates, and data quality, is mutually agreed upon between the RA and their data supplier.

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
X  Yes                       No
24. Do you agree with the measures?  
X  Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                              X  No
26. Do you agree with the levels of non-compliance?  
 Yes                              X  No

Comments about Requirement 206:

1. Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc
2. The compliance sections of Requirements 205 and 206 are not complimentary. If the RA doesn't have a data specification for an entities data, even if the RA really needs and should have that data, the maximum level of non-compliance for the RA is a level two. However, if an entity does not provide the data as specified, that entity is level 4 non-compliant, even if the data requested is not critical. Depending on how the RA writes his specification, an entity could be in violation of Requirement 206 if only a few pieces of individual data are missing, regardless of the criticality of that data.
3. Need to refer to non-compliance of meeting the data quality and availability protocols (see comments for section 205) established by the Reliability Authority.
4. Additionally, Section 205 1.3 and 2.3 should either be placed in a new section regarding data collection by the Reliability Authority or they should be contained within this section.
5. 206.4.3.1: "Copies of transmittal cover letters indicating data was sent to the reliability authority." This is too vague. A lot of the data covered by this requirement is real-time or near real-time data that is sent via an ICCP connection. Is the required transmittal letter the letter that initially set up the link between the two parties? As worded one could even take the position that the entity responsible is required to send a transmittal cover letter every time they send data via the ICCP link. The SDT should rewrite this requirement to better reflect their desired intent.
6. An example to consider: A RA has in his data specification the requirement that a certain piece or pieces of data be provided to the RA every 5 seconds. However, the entity with the data has systems in place that only report/refresh the desired data on an exception basis, such as breaker status is provided only when the breaker changes states. Per requirement 206, the data providing entity would be level 4 non-compliant. However, the RA would have the data they need in order to perform their required assessments and monitor the system. So why would the data providing entity still be able to be found non-compliant? This also goes to the heart of the issue of the RA having to justify the reasonableness of his data specification before a data providing entity would be required to spend significant dollars in order to meet the RA's arbitrary specification.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
X  Yes                       No
28. Do you agree with the measures?  
X  Yes                       No
29. Do you agree with the compliance monitoring process?  
X  Yes                       No

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30. Do you agree with the levels of non-compliance?

X  Yes

No

Comments about Requirement 207:

1. Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

Yes

X  No

32. Do you agree with the measures?

Yes

X  No

33. Do you agree with the compliance monitoring process?

X  Yes

No

34. Do you agree with the levels of non-compliance?

X  Yes

No

Comments about Requirement 208:

1. Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc
2. 208.1.1: Add generator operator.
3. 208.2.1: The requirement for the entity responsible to follow the Reliability Authority's directives is already stated in the requirements section and does not need to be restated in the measures section. Suggest rewording as follows: "The entity responsible shall document the directives of the Reliability Authority and the actions taken to meet those directives."

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments** We would encourage the Reliability Authority to work with the entities not providing the specified data and try to resolve the dispute prior to reporting the issue to the Compliance Monitor. Additionally, we believe the requirement for the Reliability Authority to notify the Compliance Monitor does not need to be contained within this standard.

**37. Any other comments on this standard?**

1. In each of these Standards the ‘tie-in’ to the Sanctions Matrix is insufficient and unclear. For example if an entity is first occurrence, level 4 non compliant to Standard 206. The penalty is a Letter (B) and \$2000 OR \$2 per MW. Which penalty is being applied the fix or variable? If it is variable, what MW is the penalty based on? The RA’s load, generator rating, something else?
2. We request the SDT review the levels of non-compliance and take into account the timeliness of actions or data submitted, the completeness of actions or data submitted and the quality of actions or data submitted. We believe that some of the requirements, when properly measured will lend themselves to having additional levels of non-compliance, for the ramifications of non-compliance for some of the requirements is not so severe to actually have an adverse impact on the bulk transmission system.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

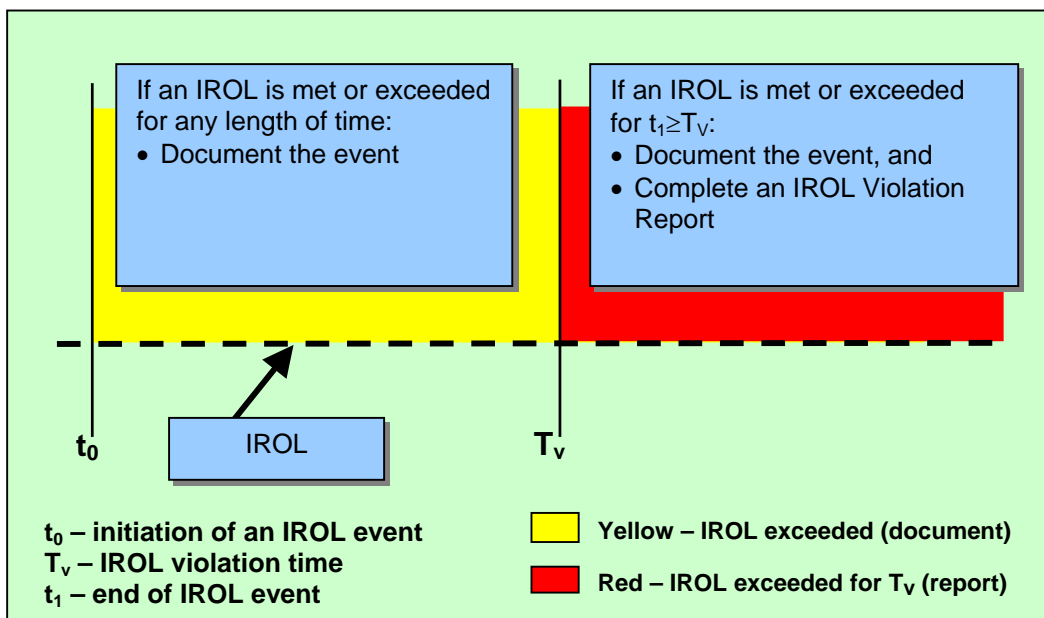
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

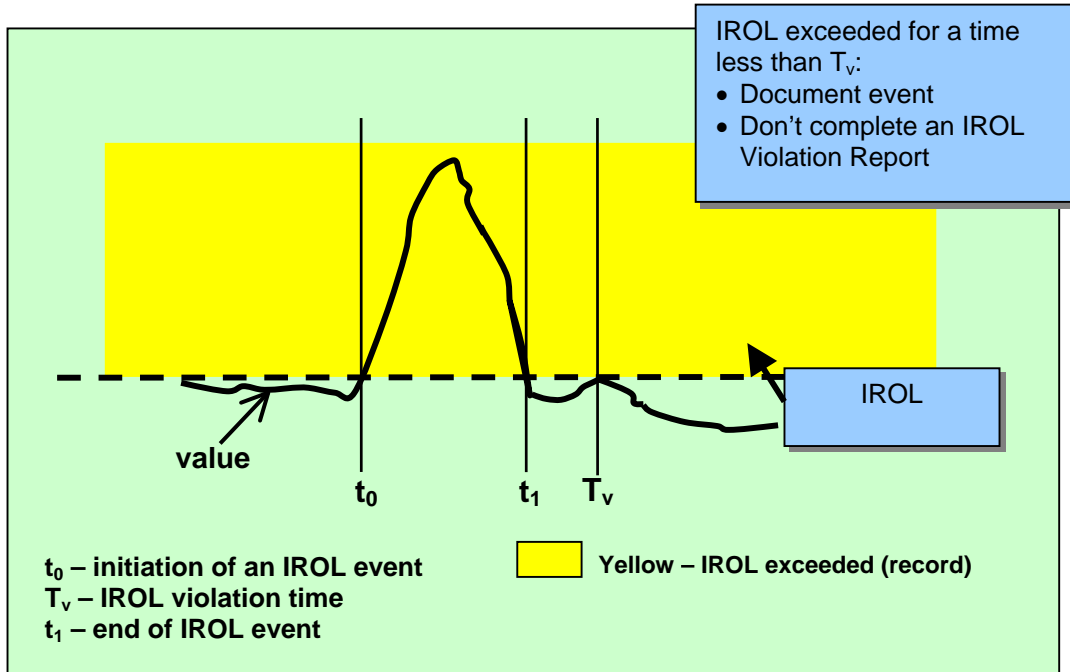
When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.



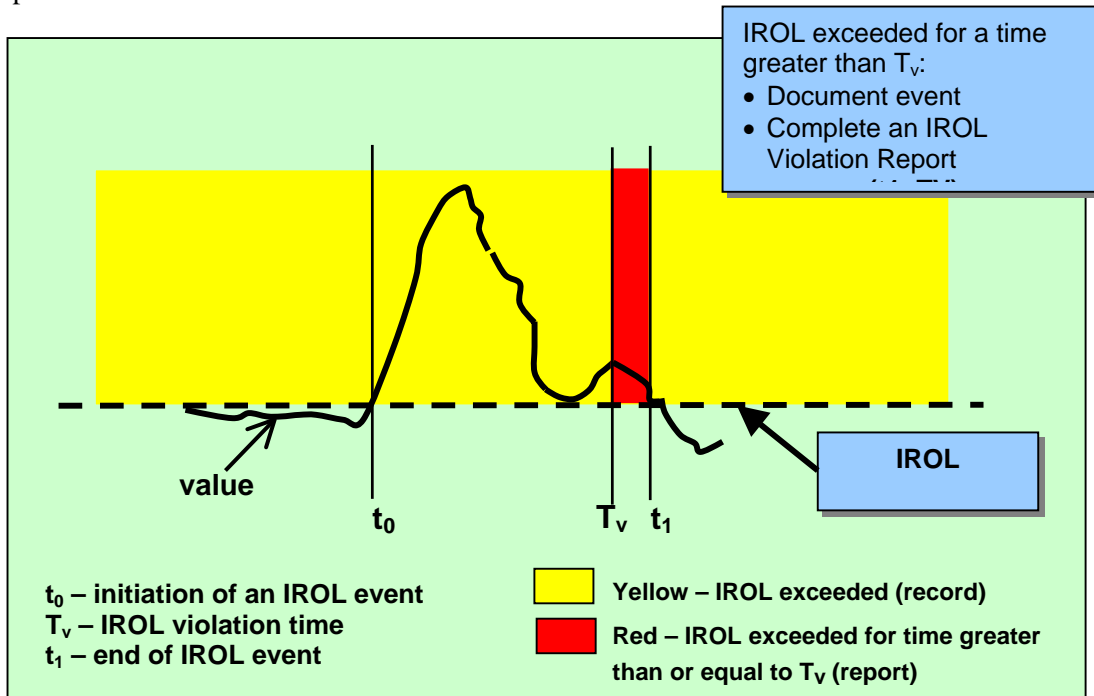


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b>STD Commenter Information (For Individual Commenters)</b>	<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Operating Reliability Working Group Southwest Power Pool	<b>Group Chair: Scott Moore</b> <b>Chair Phone: 614-716-6600</b> <b>Chair Email: spmoore@aep.com</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Gerry Burrows</i>	<i>KCP&amp;L</i>	<i>1</i>
<i>Bob Cochran</i>	<i>SPS</i>	<i>1</i>
<i>Peter Kuebeck</i>	<i>OG&amp;E</i>	<i>1</i>
<i>Scott Moore</i>	<i>AEP</i>	<i>1</i>
<i>Tom Stuchlik</i>	<i>Westar</i>	<i>1</i>
<i>Dan Boezio</i>	<i>AEP</i>	<i>1</i>
<i>Matt Bordelon</i>	<i>CLECO</i>	<i>1</i>
<i>Mike Crouch</i>	<i>WFEC</i>	<i>1</i>
<i>Mike Gammon</i>	<i>KCP&amp;L</i>	<i>1</i>
<i>Kevin Goolsby</i>	<i>SPP</i>	<i>2</i>
<i>Bo Jones</i>	<i>Westar</i>	<i>1</i>
<i>Allen Klassen</i>	<i>Westar</i>	<i>1</i>
<i>Thad Ness</i>	<i>AEP</i>	<i>1</i>
<i>Harold Wyble</i>	<i>KCP&amp;L</i>	<i>1</i>
<i>Robert Rhodes</i>	<i>SPP</i>	<i>2</i>

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

The SDT should utilize the NERC functional model and thoroughly review and correct all definitions associated with this standard. Some definitions included in this standard are not needed and others don't appear to belong in the standard. Others are simply the wrong definition. Noting the comment box on page 3 of the standard, we wonder why a definitions section was even included in the standard.

Here are some specific problem definitions:

Real-time Monitoring and the use of vision and hearing to define this term.

Real-time – Shouldn't historical time also be included?

Self-certification – Why is this term included in this standard? It probably belongs in the Compliance Enforcement Document. The second sentence doesn't appear to be a part of the definition.

Transmission Operator has the wrong definition. The definition given is the definition for Transmission Service Provider.

Documentable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Event have the exact same definition.

Reportable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Violation are basically the same definition.

T<sub>v</sub> should be listed as T<sub>v</sub>.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

It is very cumbersome and can often times be very confusing when two entities are given responsibility for the same task. The requirements outlined in 1.1, 1.2 and 1.1.2 call for both the reliability authority and the planning authority to identify the facilities that have IROLs and also to identify the IROL. We suggest that the reliability authority should be ultimately responsible for identifying and quantifying the IROLs since these are operating limits. However, the reliability

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authority should thoroughly coordinate this effort with the planning authority. Wording such as “The reliability authority shall coordinate with the planning authority to identify...” would be better.

Following this line of thought with the measures in 2.1, 2.1.1 and 2.2, wording should be changed to reflect the reliability authority’s ultimate responsibility. “The reliability authority entity shall establish...” makes a better fit.

The performance reset period should be changed to 12 months rather than one calendar year.

The SDT needs to revisit the levels of non-compliance associated with this standard. If compliance is truly a black/white issue with no shades of gray as the proposed levels indicate, why not have just a level one with no financial penalty? The proposed non-compliance level implies that it may be more important to have a list of IROLs rather than a correct list of IROLs. Also, if no IROLs exist, there will be no list which would cause the reliability authority to be in non-compliant. There needs to be consistency throughout all the standards on documentation-type non-compliance.

### **Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

Combine 4.3 and 4.3.1 into a revised 4.3 as follows:

“The reliability authority shall have displays with real-time data associated with interconnection reliability operating limits.”

The performance reset period should be changed to 12 months rather than one calendar year.

Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump directly to level four non-compliance? Is progressive non-compliance not an option? For example, if a reliability authority had identified 25 IROLs, he is level four non-compliant if only one of the IROLs is not available for real-time use. Shouldn’t there be allowances for such situations? Also, perhaps a letter that lists critical displays and identifies discrepancies would be more beneficial to maintaining interconnection reliability than a monetary penalty.



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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

The proposed measures may be too weak. For example, it appears that a reliability authority could satisfy the operational planning analysis by evaluating an invalid case for a given day. While it meets the letter of the measure, it doesn't meet the intent of the measure. Also, does 2.1.2 apply to IROLs that are associated with stability limits? If so, this measure would require a reliability authority to run real-time stability analyses every 30 minutes.

Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump directly to level four non-compliance? Is progressive non-compliance not an option? Is missing an operational planning assessment one day in a month as detrimental as missing it 10-15 days per month? Similarly, is missing one real-time assessment as bad for reliability as missing these assessments for hours, on a regular basis?

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

The performance reset period should be changed to 12 months rather than one calendar year.

Non-compliance items should match the standard's definitions. Section 5.1 should be referred to as a Documentable Interconnection Reliability Operating Limit Violation. Section 5.2 should be referred to as an Interconnection Reliability Operating Limit Violation or a Reportable Interconnection Operating Limit Violation, whichever is correct (see response to Question 1).

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

Requirements 1.1, 1.2 and 1.3 are too open-ended on the part of the reliability authority. Justification should be required for all requested data to prevent unreasonable and burdensome requests on the part of the reliability authority. The data requested and the timing of the delivery of the data should be mutually agreeable to the reliability authority and the responding entity.

The SDT should define a minimum, default set of data, such as that spelled out in Appendix 4B, and provide that as a guide for what type of data may be requested.

Requirement 1.3 appears to be repeated again as a measure in Measure 2.3. Shouldn't Requirement 1.3 be moved to Standard 206 since it deals with provision of the data? In fact, there is a great deal of material in 205 that is related data provision. Shouldn't all of this be moved to 206? Perhaps additional clarification between 205 and 206 is all that is needed.

The performance reset period should be changed to 12 months rather than one calendar year.

**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

The cover letter requirement in 4.3.1 is confusing and needs clarification. While such a letter can provide evidence that data has been sent, such a requirement could also prove to be excessive and impractical. Infrequent data transmittals such as impedance changes, ratings, etc, could easily be transmitted under cover letter. However, does this requirement also apply to each bit of real-time data transmitted via ICCP?

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Only one data point out of potentially thousands of points could cause non-compliance as specified in Section 5. This implies that nothing less than 100% of the data, 100% of the time is sufficient. Is this the intent of the SDT? Is a transducer failure in a remote substation as damaging to reliability of the interconnection as the loss of an entire ICCP link between a responding entity and its reliability authority? Is a failure for one scan cycle as critical as that point not being available for days or weeks? It would appear that non-compliance associated with this standard needs revisiting.

There appears to be inconsistency between non-compliance in 205 and 206. If a reliability authority makes an unreasonable data request in 205 and doesn't get the requested data within the specified timeframe, then the reliability authority is only penalized at a level one. But if a responding entity loses one data point for one four-second data scan, that responding entity is blasted with a level four penalty. There does not appear to be equity here.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?

Yes                       No

28. Do you agree with the measures?

Yes                       No

29. Do you agree with the compliance monitoring process?

Yes                       No

30. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

Yes                       No

32. Do you agree with the measures?

Yes                       No

33. Do you agree with the compliance monitoring process?

Yes                       No

34. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 208:

Generator operators need to be added to the entities listed in Requirement 1.1.

Requirement 1.2 is repeated again in Measure 2.1.

The levels of non-compliance need to be reviewed to ensure that they accurately reflect how well the directives were followed. Timing of actions taken with regards to when the directives were issued should also be considered.

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**35. List any Regional or Interconnection Differences for this standard:**

None

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents to not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

This standard does not require the reliability authority to notify those entities not providing data to remind those entities that they should be providing data. The reliability authority should be trying to obtain the missing data and working to resolve differences that prevent delivery of the data. If the reliability authority and the responding entity cannot reach agreement on data delivery, then the reliability authority should notify the compliance monitor.

**37. Any other comments on this standard?**

The performance reset period of one calendar year in 201, 202, 204 and 205 should be changed to 12 months. 206, 270 and 208 should remain 12 months.

Areas where non-compliance is the result of a lack of proper documentation should be consistent throughout each individual standard and across all standards, especially between this standard and Standard 600, Determine Facility Ratings, System Operating Limits and Transfer Capabilities.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

**Note** – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

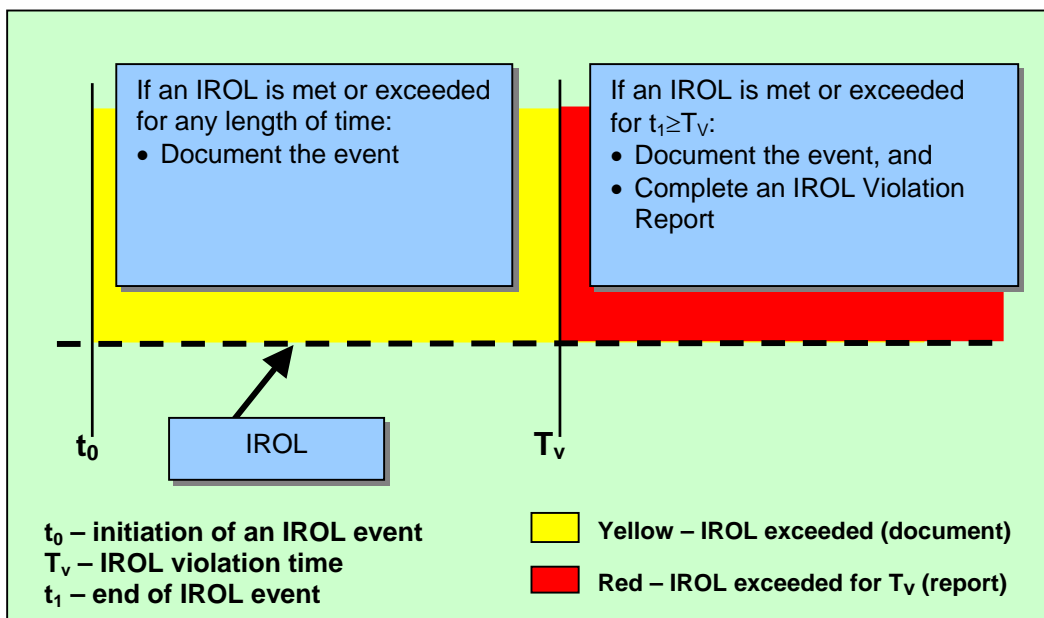
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### Major Changes to this Standard:

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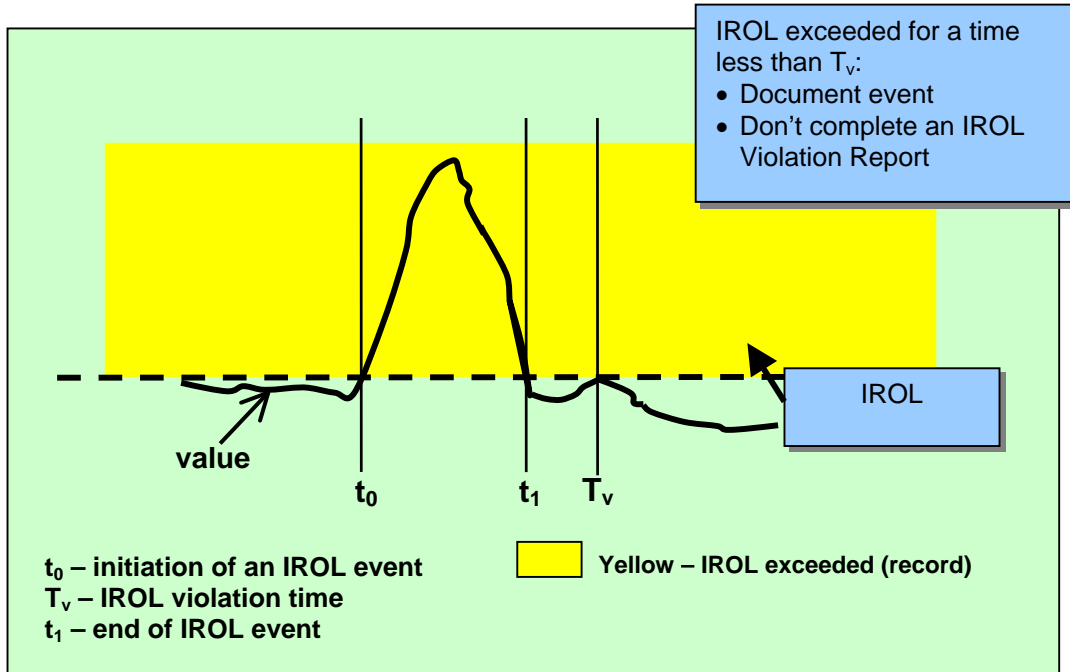
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When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

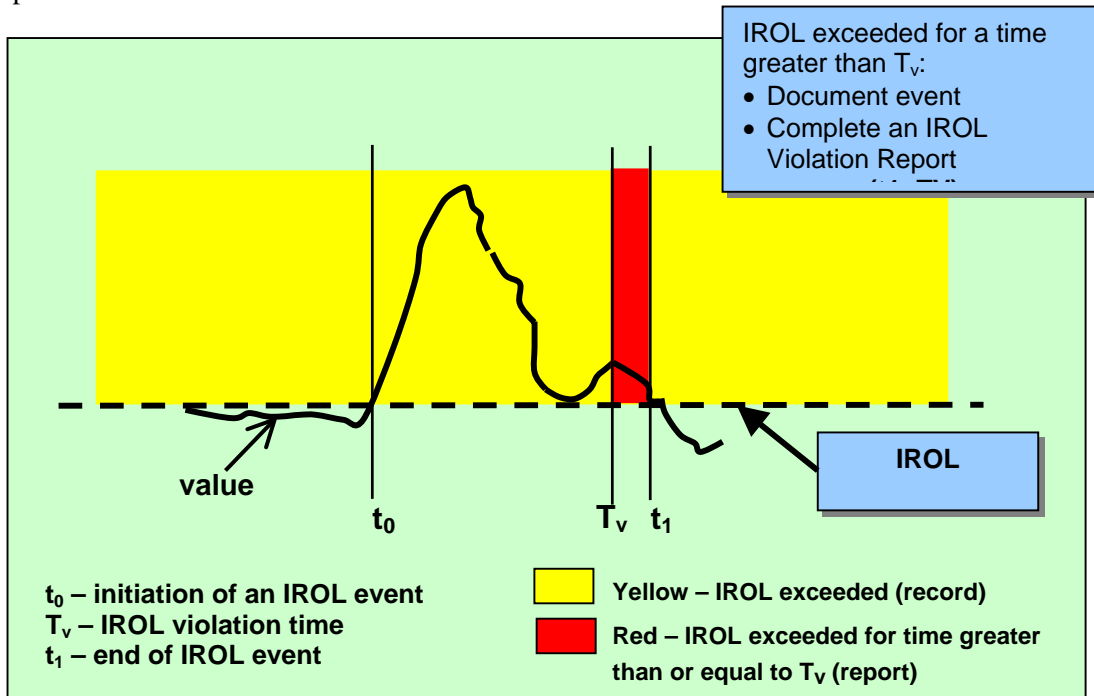


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>John Blazekovich</b>
<b>Organization</b>	<b>Exelon Corporation</b>
<b>Industry Segment #</b>	<b>1,3,5,6</b>
<b>Telephone</b>	<b>630-691-4777</b>
<b>E-mail</b>	<b>john.blazekovich@exeloncorp.com</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Exelon recommends the following definition changes to eliminate terminology from the definitions that is vague and therefore can lead to different interpretations and uncertainty as to whether there is a violation of the standard.

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading. ~~beyond an area predetermined by appropriate studies.~~

**Interconnection Reliability Operating Limit:** A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages. ~~that adversely impact the reliability of the bulk transmission system.~~ The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to  $T_v$ . Note that  $T_v$  may be zero.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments                      Based on recent events of August 14, 2003 Exelon Corporation is not as confident as the SAR authors in stating, "Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages". We ask that this Standard be put on "hold" until investigations are completed and root cause has been established.

Exelon Corporation feels that ultimately the reliability of the interconnection lies with the Reliability Authority, but Transmission Operators should not be eliminated from contributing/participating in actions that enhance reliability.

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

### Requirement 202 - Monitoring

7. Do you agree with the requirement?

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Yes                       No

8. Do you agree with the measures?

Yes                       No

9. Do you agree with the compliance monitoring process?

Yes                       No

10. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

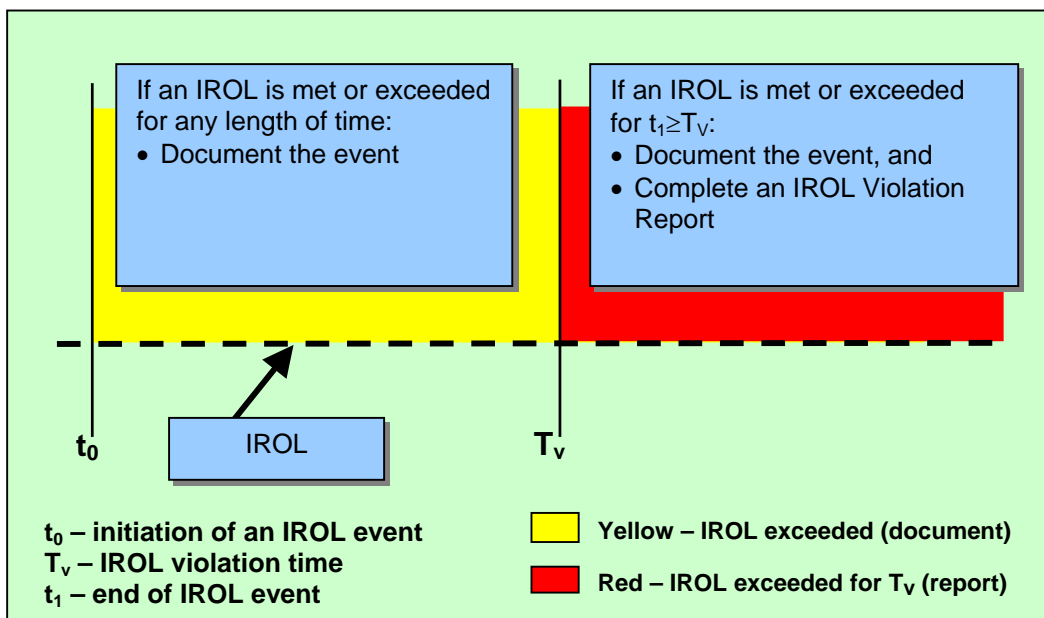
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

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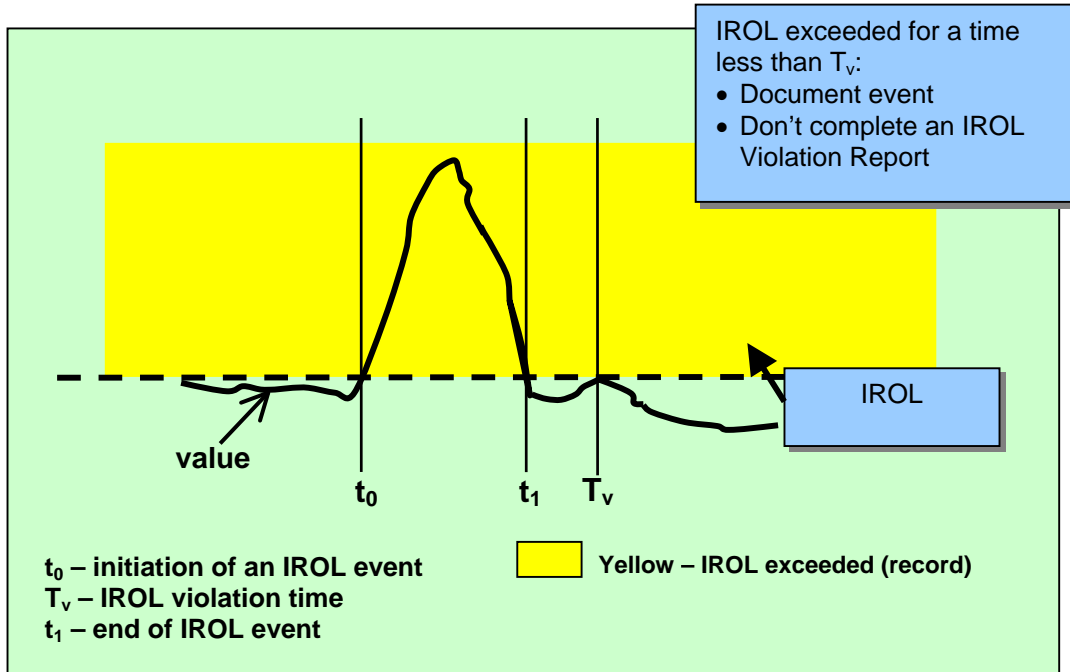
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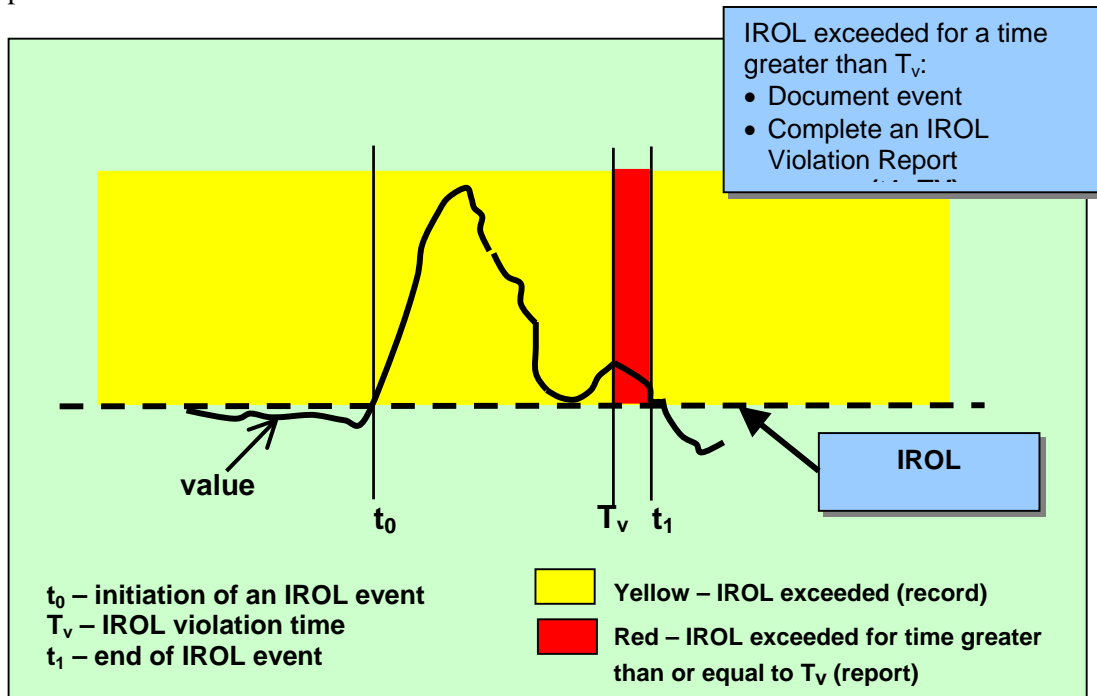


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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Raymond Mammarella</b>
<b>Organization</b>	<b>PPL Electric Utilities</b>
<b>Industry Segment #</b>	<b>1</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:



**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

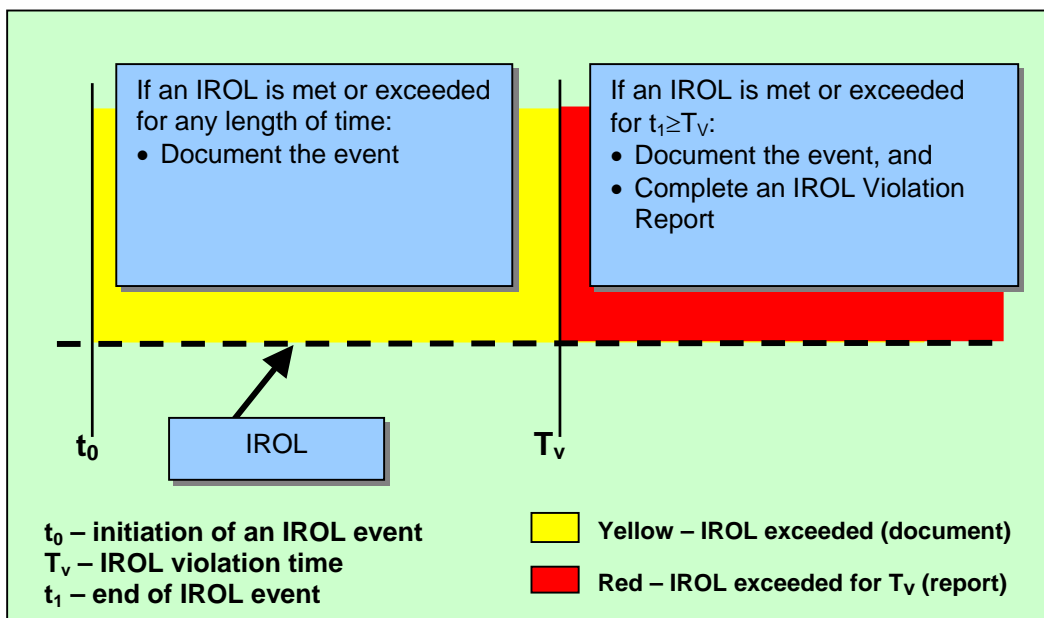
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

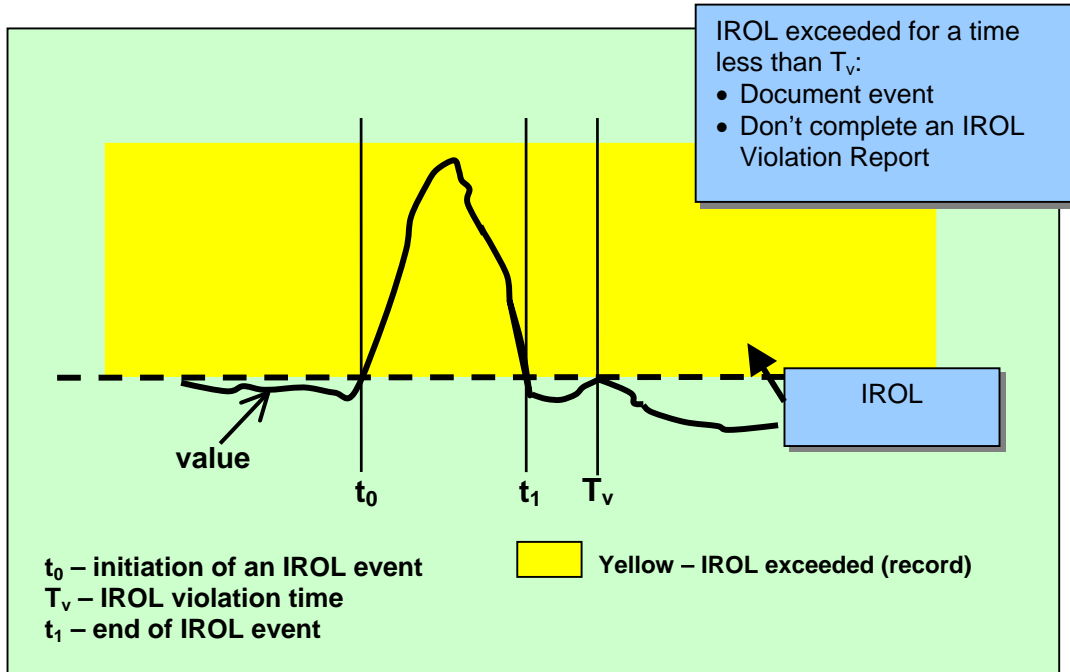
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

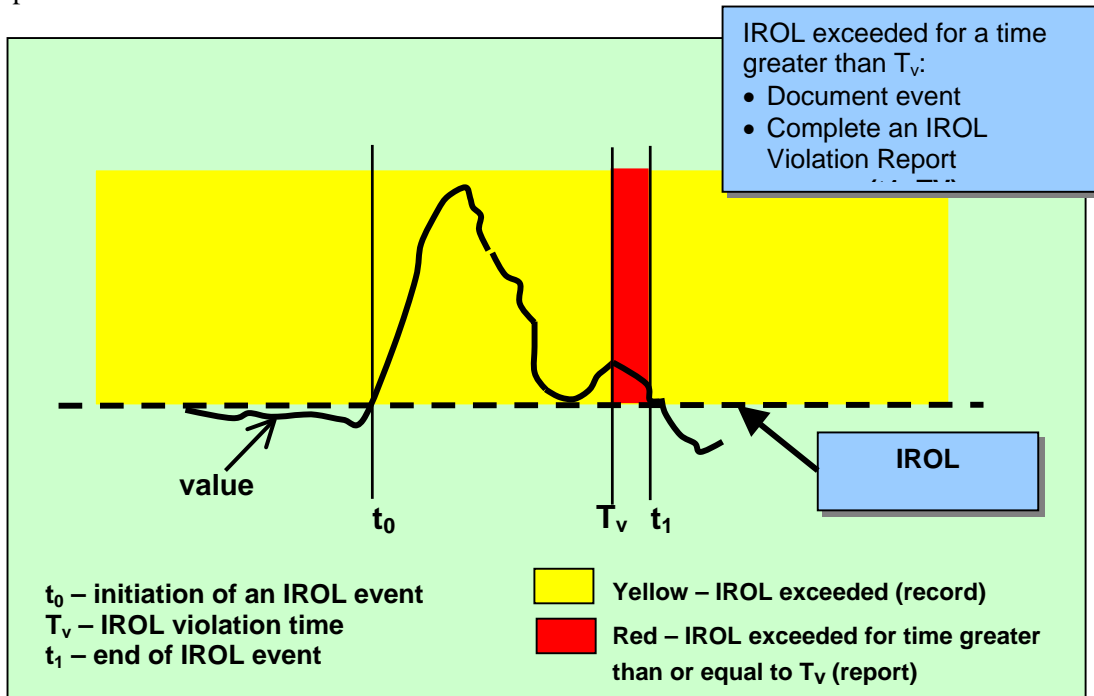


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Individual Commenters)</b>	
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<b>Organization</b>	Southeastern Power Administration
<b>Industry Segment #</b>	4,5
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<b>E-mail</b>	cartere@sepa.doe.gov

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

Based on the following definitions, we do not believe that the definition of “*Documentable Interconnection Reliability Operating Limit Violation*” is necessary (is it truly a violation?). It appears that it is identical to the definition of “*Interconnection Reliability Operating Limit Event*” and the fact that an “*event*” must be documented is contained in the definition of “*Interconnection Reliability Operating Limit*”.

- **Documentable Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for any length of time.
- **Interconnection Reliability Operating Limit Event:** An instance of exceeding an interconnection reliability operating limit for any length of time.
- **Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ .
- **Interconnection Reliability Operating Limit:** A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to  $T_v$ . Note that  $T_v$  may be zero.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. This Standard could be improved by formatting (where possible)



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Measurement 2.1 to relate to Requirement 1.1 and Measurement 2.2 to relate to Requirement 1.2, etc. rather than listing the measures and requirements arbitrarily and independently.

In order to tie the OEC's to the Measures, Section 4 should be clarified to read:

4.3. The entity responsible shall have the following Objective Evidence for Compliance available upon the request of its compliance monitor:

- 4.3.1. List of interconnection reliability operating limits for the reliability authority's reliability area **as described in Measure 2.1 above**
- 4.3.2. List of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits **as described in Measure 2.2 above**

**Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
- 8. Do you agree with the measures?  
 Yes                       No
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No
- 10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measures it supports. It may be a practical solution that the real-time data and interconnection reliability operating limits be made available to operators in the form of a "display", however this solution is not prescribed in the measures and should not be listed exclusively.

We suggest that section 4.3.1 be rewritten to read:

- 4.3.1. Process used for monitoring and comparing real time data associated with interconnection reliability operating limits in accordance with Measure 2.3 above. This may be accomplished through the use of an operator display and should demonstrate compliance with Measures 2.1 and 2.2.**

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

**4.3. The reliability authority shall demonstrate in accordance with Measure 2.1, the following upon the request of the compliance monitor:**

**4.3.1. Ability to perform an operational planning analysis**

**4.3.2. Ability to perform a real time assessment**

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

Has the Interconnection Reliability Operating Limit Violation Report been developed yet? Is this the existing NERC Operating Policy 5, Appendix 5F as modified with the results of the Reliability Coordinator IRLV Field Test?

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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- 4.3. The reliability authority shall have the following available upon the request of its compliance monitor:
  - 4.3.1. Operations logs or other documentation **in accordance with Measure 2.1** indicating the magnitude and duration of each instance of exceeding an interconnection reliability operating limit and the actions or directives issued for each of these instances
  - 4.3.2. Interconnection Reliability Operating Limit Violation Reports **completed in accordance with Measure 2.2**

Level four: non-compliance is not supported by either the Measures or the Compliance Monitoring Process. We understand there is a desire by some in the industry to hold the Reliability Authority accountable for Interconnection Reliability Operating Limit Violations, however, as written, this standard does not support it. Section 5.4 should be rewritten to read:

- 5.4. Level four: Interconnection reliability operating limit exceeded for time greater than or equal to  $T_v$  minutes and either:
  - 5.4.1 no documentation to indicate actions taken or directives issued to mitigate the instance, or
  - 5.4.2 no Interconnection Reliability Operating Limit Violation Report completed and filed with its compliance monitor

### **Requirement 205 - Data Specification**

- 19. Do you agree with the requirement?  
 Yes                       No
- 20. Do you agree with the measures?  
 Yes                          No
- 21. Do you agree with the compliance monitoring process?  
 Yes                          No
- 22. Do you agree with the levels of non-compliance?  
 Yes                          No

Comments about Requirement 205:

The requirement for data collection should be tied to its impact on reliability. Requirement 1.3 should be modified to read:

- 1.3. The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority does not provide data as specified **and this lack of data has an impact on reliability.**

Measurement 2.3.1 should be rewritten to read:

- 2.3.1. The notification shall take place within five business days of discovering that the data **having an impact on reliability** is missing.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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In order to prevent a shotgun approach to data collection we propose Section 2.1.1 be modified to read:

- 2.1.1. Specification shall include a list of **minimum** required data, a mutually agreeable format, and timeframe and periodicity for providing data.

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

- 4.3. The reliability authority shall have the following available upon the request of the compliance monitor:

4.3.1. Data specification(s) **in accordance with Measure 2.1**

4.3.2. Proof of distribution of the data specification(s) **in accordance with Measure 2.2**

### **Requirement 206 - Data Provision**

23. Do you agree with the requirement?

Yes  No

24. Do you agree with the measures?

Yes  No

25. Do you agree with the compliance monitoring process?

Yes  No

26. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 206:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measure it supports. A possible solution might be:

- 4.3.1. **Documentation** indicating data was sent to the reliability authority **in accordance with Measure 2.1**

Non-compliance in data submission could take several forms and levels of impact to reliability. Section 5 should be modified as follows:

5. Levels of Non-compliance:

5.1. Level one: **Data was provided, but not in the mutually agreed format**

5.2. Level two: **Data was provided, but not within the time-frame specified**

5.3. Level three: **Incomplete data was provided**

5.4. Level four: Data not provided to the reliability authority as specified.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 207 - Action Plan**

27. Do you agree with the requirement?

Yes  No

28. Do you agree with the measures?

Yes  No

29. Do you agree with the compliance monitoring process?

Yes  No

30. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 207:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. The Levels of non-compliance should be objectively determined based on the evidence.

Measure 2.1 should be modified to include:

- 2.1. The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall **identify and** be coordinated with those entities responsible for acting and with those entities impacted by such actions.

Section 4.3 should be modified to include:

- 4.3. The reliability authority shall make the following available for inspection by the compliance monitor upon request:

- 4.3.1 Action plan **developed in accordance with Measure 2.1**

Section 5 should be modified to include:

5. Levels of Non-compliance

- 5.1. Level one: Action plan exists but wasn't coordinated with all involved and impacted entities
- 5.2. Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities
- 5.3. Level three: **Action plan is incomplete**
- 5.4. Level four: No action plan

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Non-compliance could take several forms and levels of impact to reliability. The Levels of non-compliance should be objectively determined based on the evidence.

Section 4.3.1 should be modified to read:

- 4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:
- 4.3.1.1. Date and time of each of directive received
  - 4.3.1.2. Directive issued
  - 4.3.1.3. Actions taken in response to directive **in accordance with Measure 2.1**

Section 5 should be modified as follows:

5. Levels of Non-compliance
- 5.1 Level one: **Operations log or other data source(s) do not show one of the following:**
    - 5.1.1 **Date and time of each of directive received**
    - 5.1.2 **Directive issued**
    - 5.1.3 **Actions taken in response to directive**
  - 5.2 Level two: **Operations log or other data source(s) do not show any of the following:**
    - 5.1.4 **Date and time of each of directive received**
    - 5.1.5 **Directive issued**
    - 5.1.6 **Actions taken in response to directive**
  - 5.3 Level three: Not applicable.
  - 5.4 Level four: Did not follow directives.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**35. List any Regional or Interconnection Differences for this standard:**

None

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments** We believe that it is appropriate to include this in the standard with the comments noted in Section 205.

**37. Any other comments on this standard?**

None

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

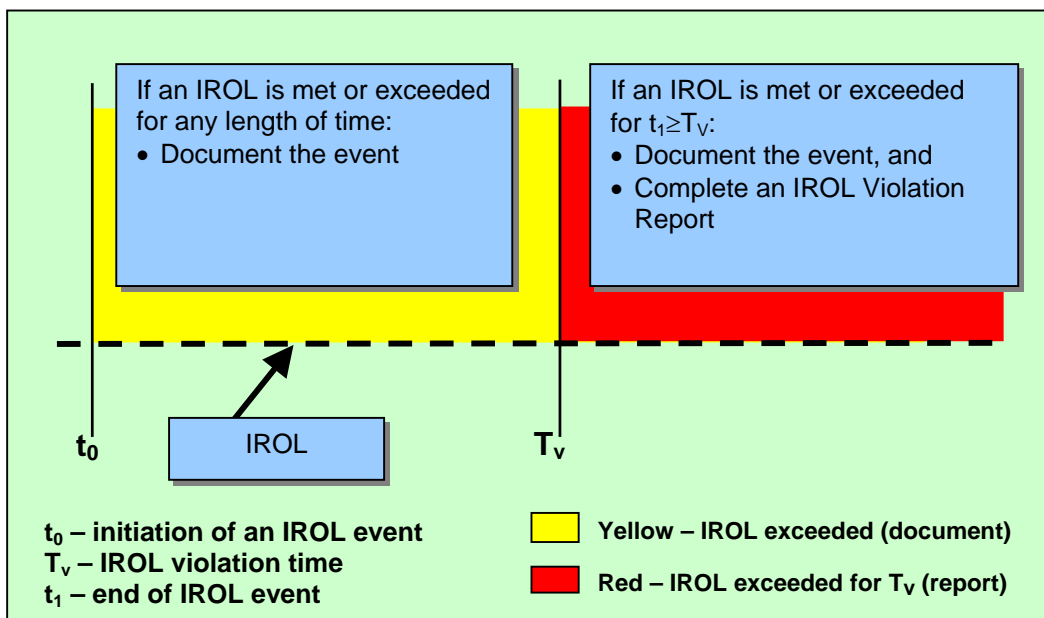
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

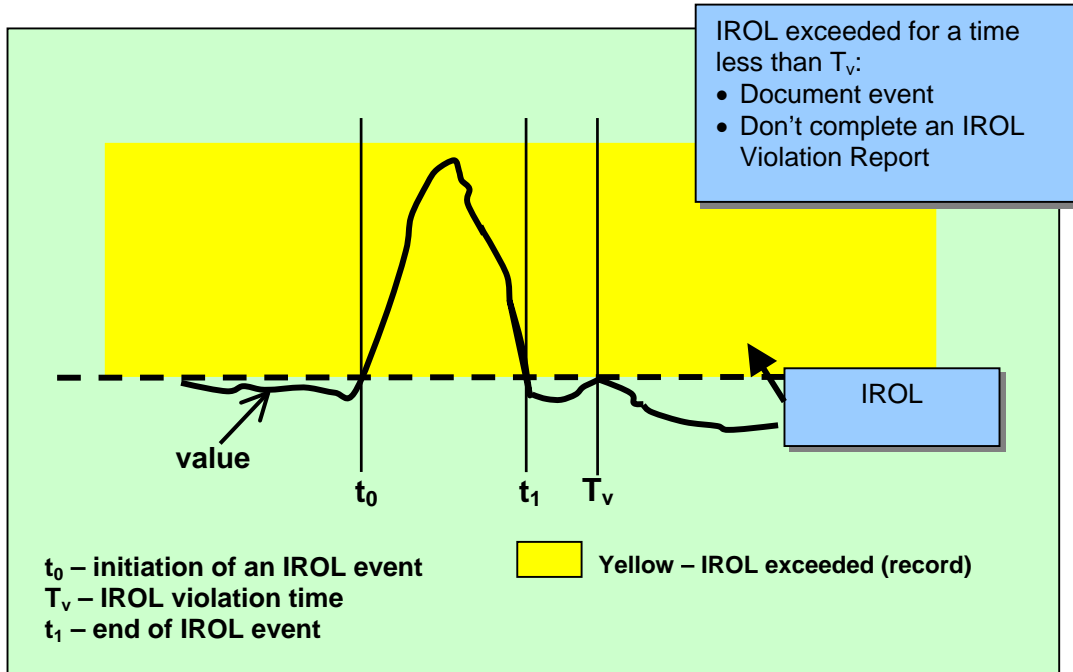
When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.



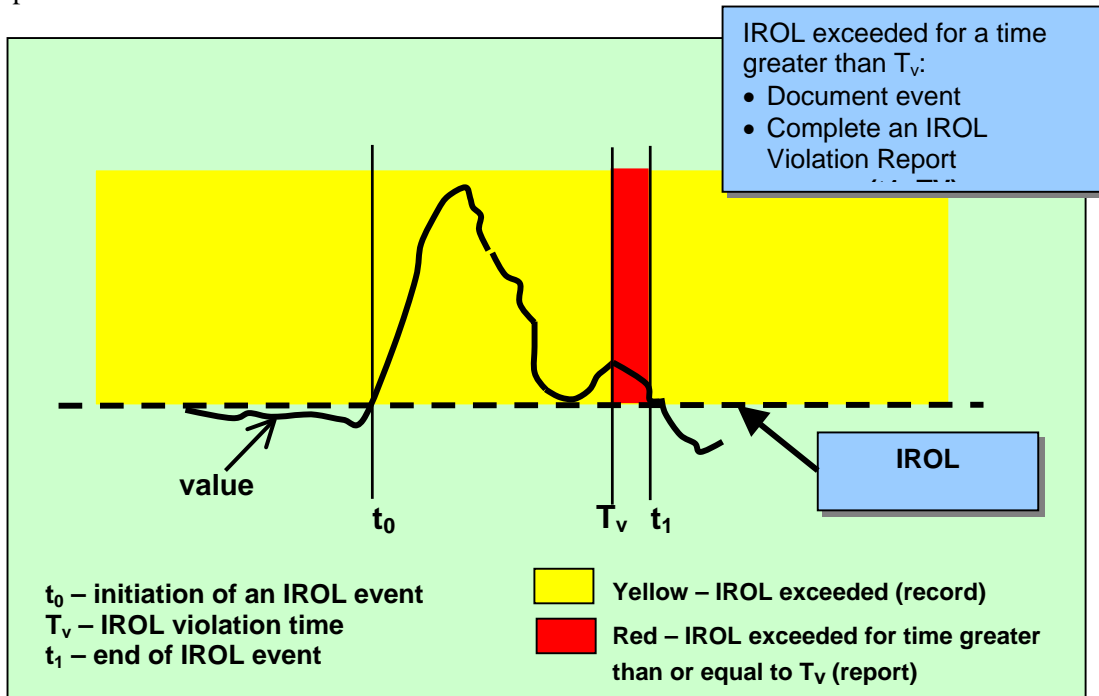


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
A definition for Minimum Return Time should be included (the minimum period in seconds that a value must remain below an IROL limit after an excursion has occurred. If the value again exceeds IROL before this time limit, the event continues.).

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201: Reword measures to state what is measured and to refer to the associated requirements. Section 201.5.3 should read "List exists, but is not complete or lacks technical merit (is not good utility practice)."

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203: Modify section 203.1.1 to read "The reliability authority shall perform, **or direct performance of**, operational planning analyses . . . ". Modify 203.4.2 to read "The performance-reset period shall be one **year**. The . . . "

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206: For consistency with previous sections, replace the first sentence in section 206.4.2 with "The performance-reset period shall be one calendar year."

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207: For consistency with previous sections, replace the first sentence in section 207.4.2 with "The performance-reset period shall be one calendar year."

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208: Modify section 208.5.1 to read "Level one: Did not properly document an issued directive and/or the subsequent action taken."



**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
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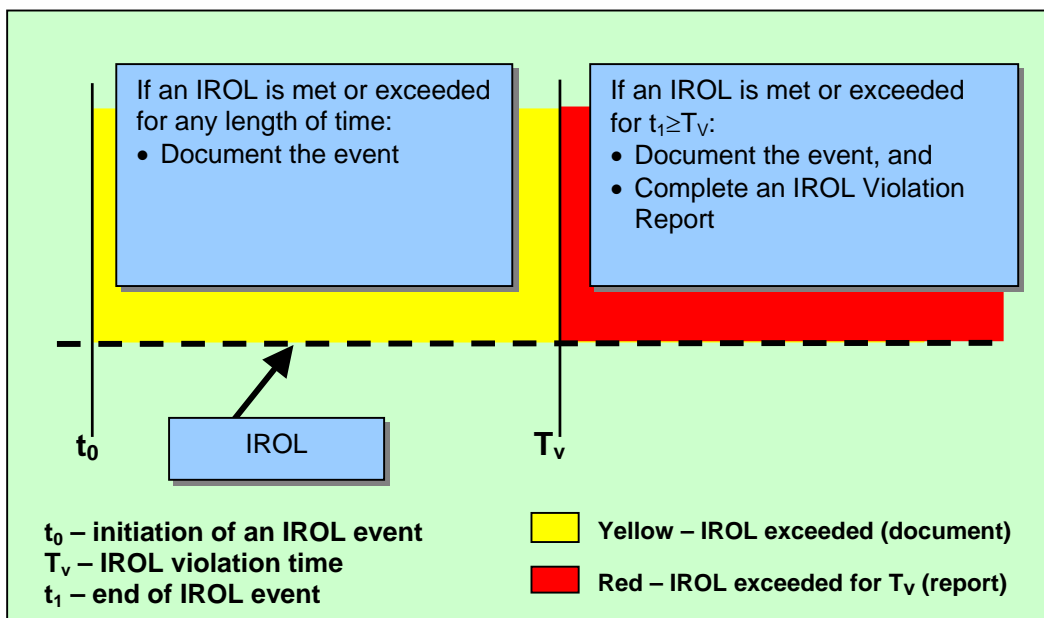
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### Major Changes to this Standard:

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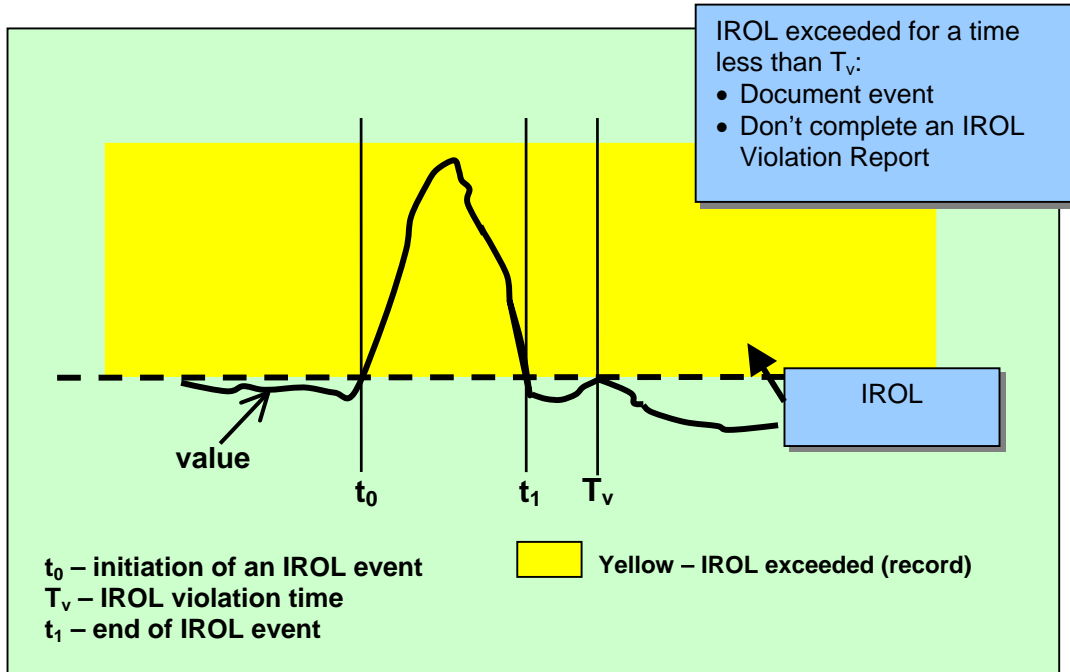
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

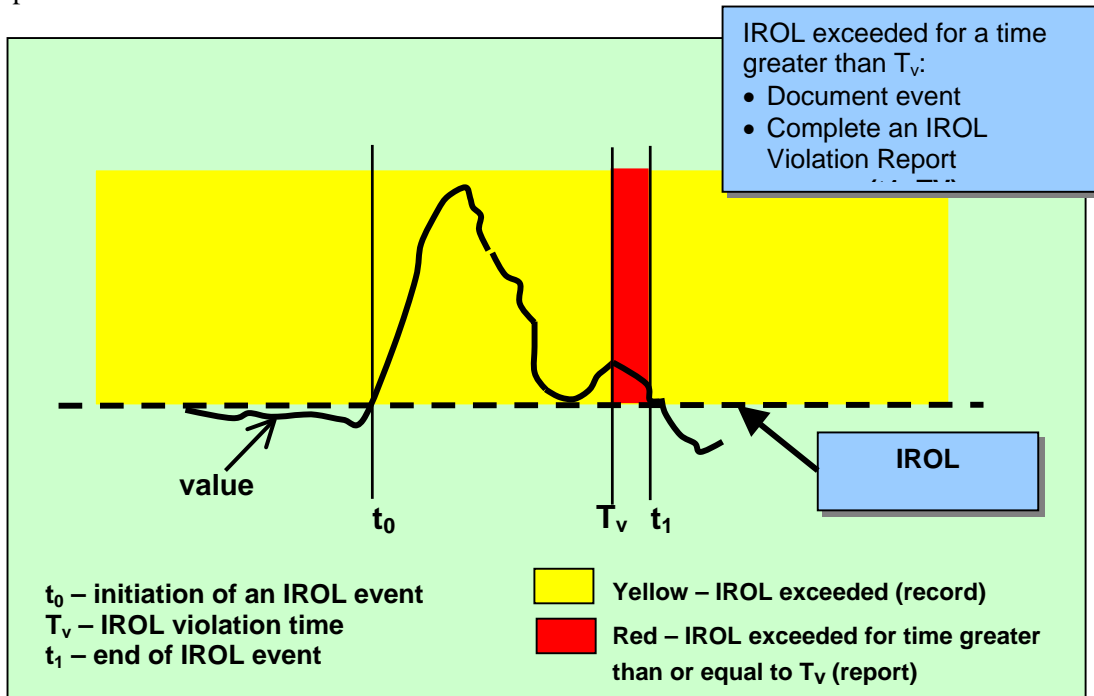


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
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**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
The definition for Transmission Operator is incorrect. The definition is word for word the definition of the Transmission Service Provider in the Functional Model. It appears the wrong definition was used. The right definition is in the functional model.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202: Step 4.3.1 appears to assume that the RA will use computer displays for real time data. What if some other method that works equally as well is used. As written this is a "how" statement. I would suggest that the statement be "Provide evidence of tools used to monitor real time data".



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203: Why was 30 minutes used for a real time assessment? Is one day a good target to be performing planning Analysis? If a generator or transmission operator is planning an outage will the RA tell the generator or transmission operator the day before the outage that is OK to proceed with the outage? Is that process covered in some other standard?

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204: The level four non-compliance does not match the measure. The measure only requires a report and does not hold the RA responsible for exceeding the operating limit.

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

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Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

- Step 4.3.1 is not necessarily going to be required. Real time data will not have a cover letter. I would suggest that it should be re-worded to say: "Provide evidence that data was sent to the reliability authority."
- The measure and level of non-compliance does not address failure to provide data because of broken equipment. If an entity temporarily fails to provide real time data because of a failure of a RTU would it be considered a level four non-compliance?

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

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Comments about Requirement 208:

- 31. Documentation is not a reliability issue
- 32. Documentation is not a reliability issue
- 33. The entity should only document the actions taken. The RA should document the directive.
- 34. The level of non-compliance only deals with following the directives. Why are there measurements (documentation) that are not compliance issues? Either they should not be measurements (my choice because failure to document is not a reliability issue), or the should have a compliance measure.

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

Not all System operating limits are being addressed in this standard. System operating limits in one area can be caused by the failure of another BA to balance generation and load. The RA will be getting the ACE values and should be responsible for assuring that imbalance situation does not cause a problem on the system. This situation is not addressed in the Balance Resource and Demand Standard because it allows unlimited imbalance if it is the opposite direction of frequency error. This situation needs to be addressed in a standard.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

**Note** – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

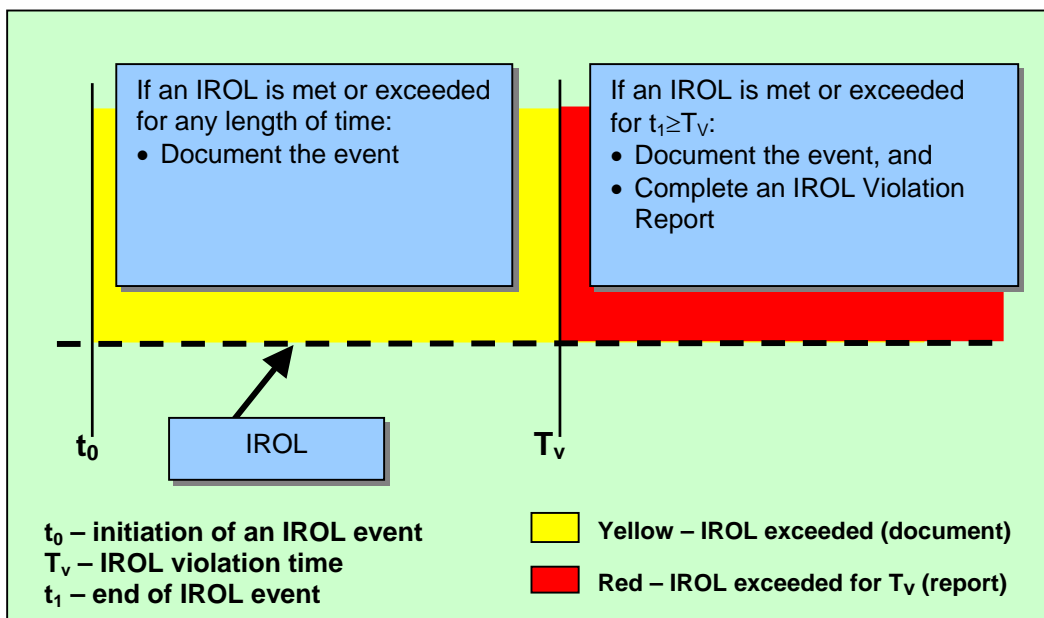
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

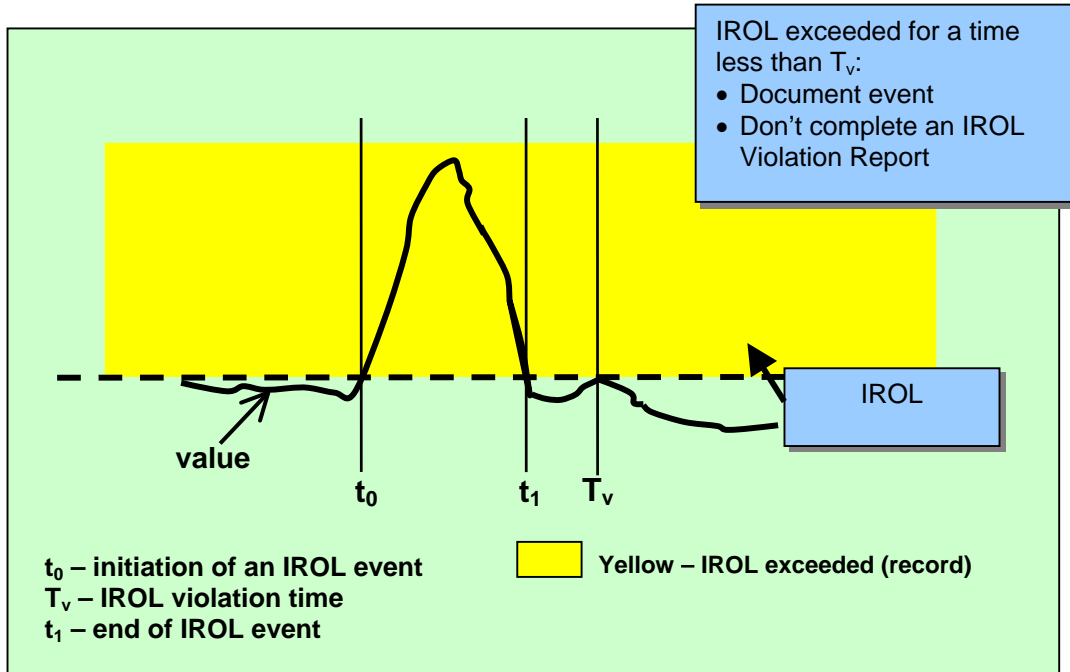
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

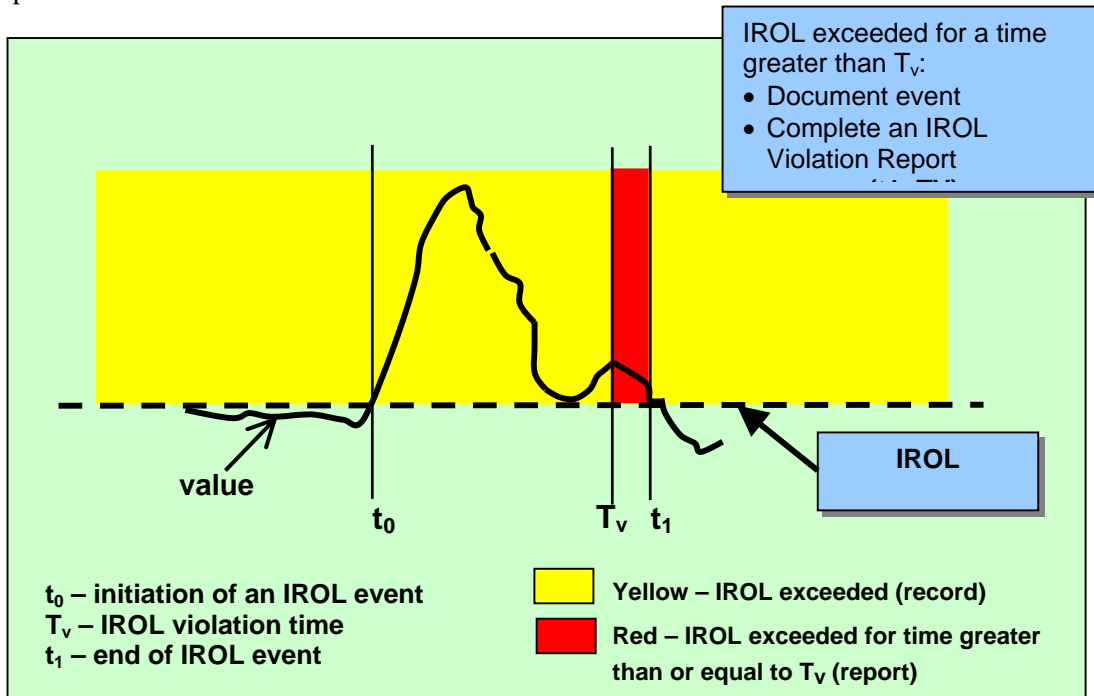


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Tony Jankowski
<b>Organization</b>	We Energies
<b>Industry Segment #</b>	4
<b>Telephone</b>	(262) 544-7117
<b>E-mail</b>	tony.jankowski@we-energies.com

<p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

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**Background**

1. Do you agree with the definitions provided in the front of this standard?

- Yes                       No    Real time monitoring: Vision and hearing does not comply with the Americans with Disabilities Act. "To use human or automated means"  
Reliability Authority Area: "interconnection (tie-line) metering". This provision is for a Balancing Authority and Energy Management, not the RA. The Reliability Authority area consists of all assets under the control and responsibility of the RA.

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
See Standard document

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

- Yes                       No  
Comments: The Transmission Operator should have operating performance requirements developed in another Standard.

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?

- Yes                       No    Standard and requirements shall apply to only one function!  
There should be only one responsible function.

4. Do you agree with the measures?

- Yes                       No    Where does the Buck stop?

5. Do you agree with the compliance monitoring process?

- Yes                       No    Only the RA should be listed.

6. Do you agree with the levels of non-compliance?

- Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?

- Yes                       No

8. Do you agree with the measures?

- Yes                       No    2.3 Add in Real Time

9. Do you agree with the compliance monitoring process?

- Yes                       No

10. Do you agree with the levels of non-compliance?

- Yes                       No

Comments about Requirement 202:



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No    1.2 Only for identified IROL applicable to the RA or could this assessment create a new one?
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No    4.2 Not sure how the matrix resets daily?
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?

Yes  No

24. Do you agree with the measures?

Yes  No

25. Do you agree with the compliance monitoring process?

Yes  No 4.2 Should not be a rolling time frame.

26. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?

Yes  No

28. Do you agree with the measures?

Yes  No

29. Do you agree with the compliance monitoring process?

Yes  No

30. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

Yes  No

32. Do you agree with the measures?

Yes  No

33. Do you agree with the compliance monitoring process?

Yes  No

34. Do you agree with the levels of non-compliance?

Yes  No Should have a documentation level of noncompliance similar to sec. 204, 5.1

Comments about Requirement 208:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**35. List any Regional or Interconnection Differences for this standard:**

None

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

Please provide assessment of how this Standard will work with abnormal operations and emergency restoration. How is the line drawn. Use the August 14, 2003 event as an example for determining compliance and sanctions.



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
 The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
 E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

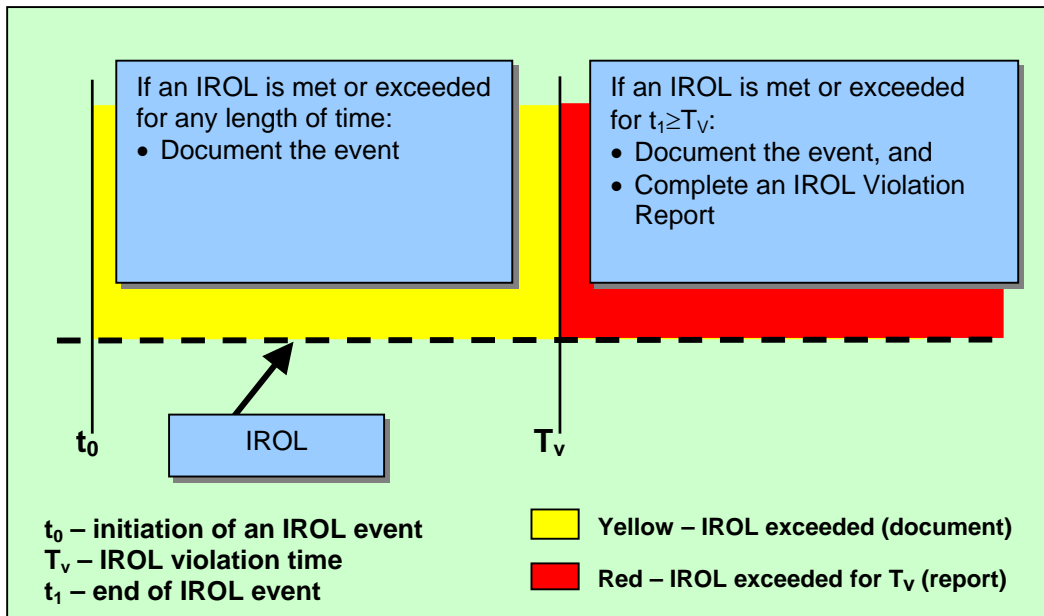
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

**Major Changes to this Standard:**

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

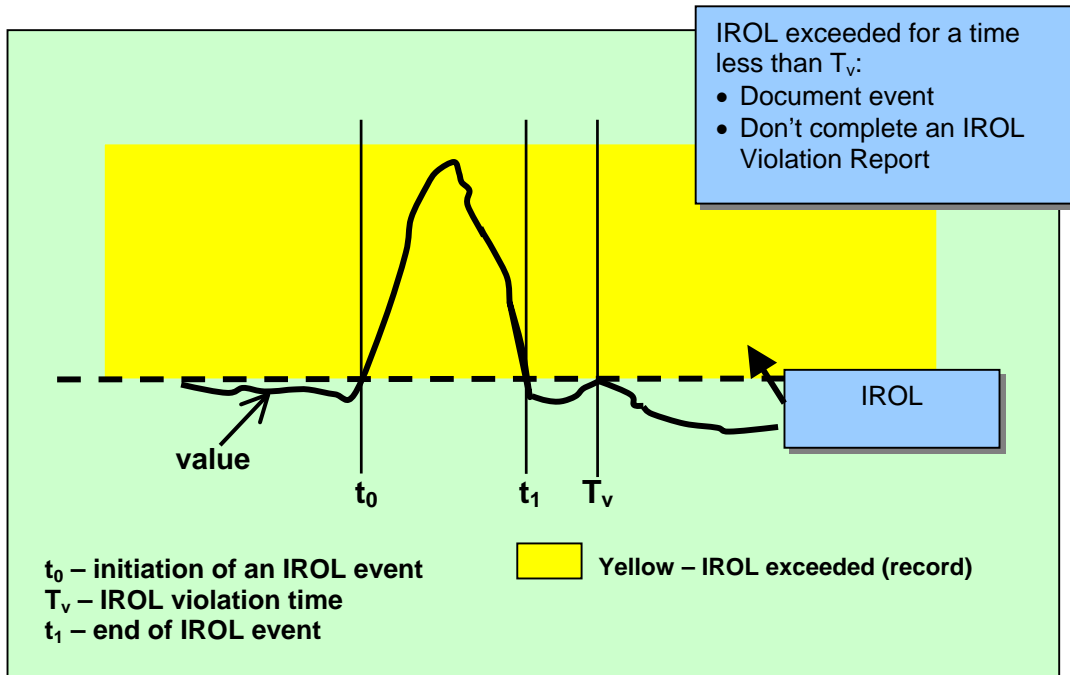
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

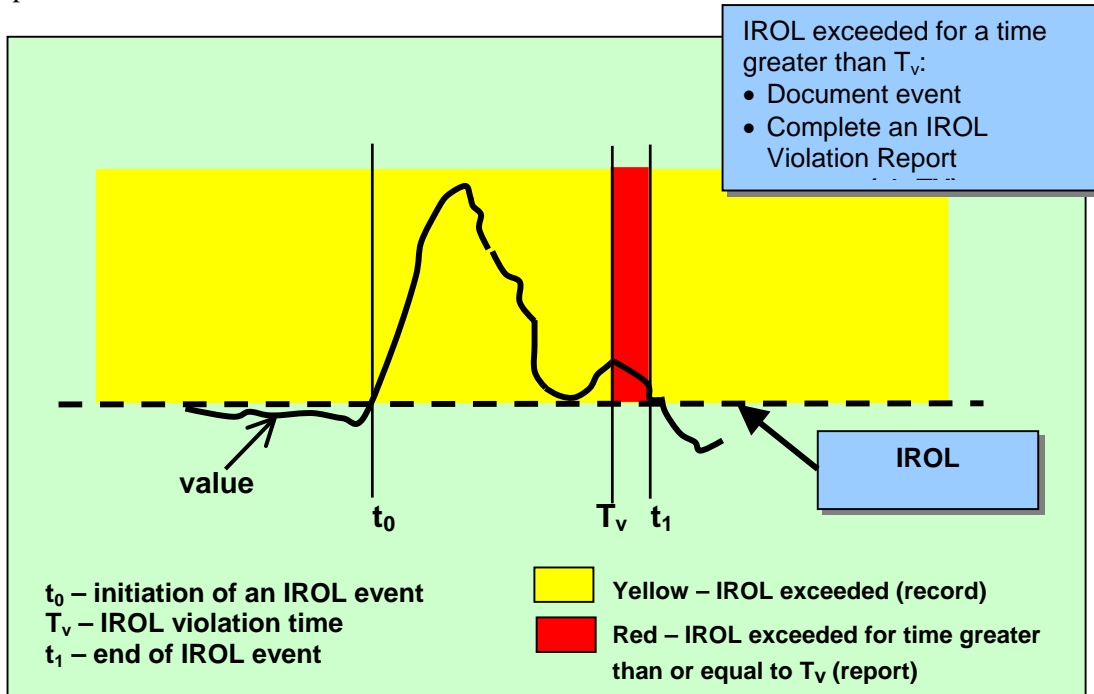


Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the 'yellow' area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the 'yellow area') and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the 'red area'), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

**Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**STD Commenter Information (For Individual Commenters)**

**Name** Linda Campbell on behalf of the  
FRCC OC,EC, MIC

**Organization** FRCC

**Industry Segment #** 2

**Telephone** 813-289-5644

**E-mail** lcampbell@frcc.com

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

**FRCC COMMENT 8/29/03**

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>FRCC Operating, Engineering &amp; Market Interface Committee members</i>	<b>Group Chair:</b> <b>Chair Phone:</b> <b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Linda Campbell</i>	<i>FRCC</i>	<i>2</i>
<i>Paul Elwing</i>	<i>Lakeland Electric</i>	<i>3</i>
<i>John Shaffer</i>	<i>Florida Power &amp; Light Company</i>	<i>1</i>
<i>Bob Remley</i>	<i>Clay Electric Cooperative</i>	<i>4</i>
<i>Patti Metro</i>	<i>FRCC</i>	<i>2</i>
<i>Eric Grant</i>	<i>Progress Energy – Florida</i>	<i>1</i>
<i>Joe Roos</i>	<i>Ocala Electric Utility</i>	<i>3</i>
<i>Joe Krupar</i>	<i>Florida Municipal Power Agency</i>	<i>3</i>
<i>Richard Gilbert</i>	<i>Lakeland Electric</i>	<i>3</i>
<i>Bill Slater</i>	<i>Progress Energy – Florida</i>	<i>1</i>
<i>Amy Long</i>	<i>Lakeland Electric</i>	<i>1</i>
<i>Roger Westphal</i>	<i>Gainesville Regional Utilities</i>	<i>5</i>
<i>Bob Goss</i>	<i>Southeastern Power Administration</i>	<i>5</i>
<i>Steve Wallace</i>	<i>Seminole Electric Cooperative</i>	<i>4</i>
<i>Ted Hobson</i>	<i>JEA</i>	<i>1</i>

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?

- Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision. Most of the definitions are very helpful. However, we do have some questions on a few of them.

- There is a definition for Real-time Monitoring and one for Real-time Assessment. The monitoring definition states "To use vision and hearing.." while the assessment definition states to collect and review immediately available data. It seems to us that the monitoring definition is really unnecessary, as we believe the intent is really covered in the assessment definition.
- The definition for Operational Planning Analysis states, "The analysis should ensure that no IROLs will be exceeded." Is that really true for the analysis? Doesn't the analysis identify potential problems that need to be acted upon, so that it is really the actions of entities, not the analysis itself, that ensures no limit will be exceeded?
- The definition of transmission operator in this document does not agree with the definition of transmission operator in the Functional Model. This definition actually is the same as the transmission service provider function. It appears there is still confusion over the functions defined in the functional model which is alarming since we are developing the reliability standards based on those functions.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

- Yes                       No

Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?

- Yes                       No

4. Do you agree with the measures?

- Yes                       No

5. Do you agree with the compliance monitoring process?

- Yes                       No

6. Do you agree with the levels of non-compliance?

- Yes                       No

Comments about Requirement 201: In 1.2.1 of the requirement, Tv is called a "response time", but on the definition page it is called a "violation time". Consistency is needed. We did not agree with the measures because the measures state "the entity responsible" which is not specific enough. Who is the entity responsible? We do not have any problems with the steps of the compliance monitoring process, but again, the phrase "the entity responsible" is used throughout and this should be more specific. We do agree with the intent of the non-compliance level listed in 5.4; however do have a concern that it presumes that all transmission systems will have an IROL. This may not be true for radial systems. Perhaps 5.4 could be reworded as follows, "No documented analysis of possible IROLs or list of facilities subject to IROLs for the RA's reliability area was provided. Finally, Section 6, Sanctions should be removed completely. The compliance monitoring process and non-compliance levels are appropriate parts of the reliability standard. However, the sanctions and penalties are part of the compliance program and are separate. The enforcement matrix should not be attached to this document, even for information only, as that gives the appearance of being part of the standard. The



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sanctions and penalties, along with the enforcement matrix are the responsibility of the new Compliance and Certification Committee (CCC). If the matrix is attached to the standard, every time the CCC changes it, the standard will need to be revised which is not something we should set ourselves up to do.

**Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
  
- 8. Do you agree with the measures?  
 Yes                       No
  
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No
  
- 10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202: Measure 2.3 needs to be clarified to state "The RA shall monitor real-time system operating parameters.." rather than just system operating parameters. We have the same concern that we identified in the comments to Requirement 201 regarding 5.4, the level of non-compliance. Section 6, Sanctions should be removed completely. The compliance monitoring process and non-compliance levels are appropriate parts of the reliability standard. However, the sanctions and penalties are part of the compliance program and are separate. The enforcement matrix should not be attached to this document, even for information only, as that gives the appearance of being part of the standard. The sanctions and penalties, along with the enforcement matrix are the responsibility of the new Compliance and Certification Committee (CCC). If the matrix is attached to the standard, every time the CCC changes it, the standard will need to be revised which is not something we should set ourselves up to do.

Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement 203 - Analyses and Assessments**

- 11. Do you agree with the requirement?  
 Yes                       No
  
- 12. Do you agree with the measures?  
 Yes                       No
  
- 13. Do you agree with the compliance monitoring process?  
 Yes                       No
  
- 14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203: In 1.1 it states that the RA is performing operational planning analyses to "verify that its planned bulk electric system operations will not exceed.." Is that really what they are doing? It would seem to us that this operation planning is being done to determine if there is a potential problem so that actions can be directed to alleviate or mitigate the problem so that IROL violations will not occur. The SDT may want to consider rewording this for clarification. Also, 1.2 states that real time assessments are to verify that it is not exceeding IROLs. Again, verify does not seem to be the correct word. The reason we have stated that we do not agree with the compliance monitoring process is that the performance reset period of one day seems much too frequent. Even though the measures are to be done daily, the performance monitoring period should not be more often than monthly. If one day is kept, it would be a great burden on both the RA and the compliance monitor and we are not sure that would really improve reliability. Since we believe the reset period should be monthly, the non-compliance levels should be adjusted to reflect level one for a small number of days, and level 4 being every day of the month. We also have a question about 5.4 level of non-compliance for operational planning. Does the SDT assume these analyses are load flow studies? If so, we agree with the daily measure. However; if the intent was to also include daily stability studies, we do not agree. Stability studies should only be required to be performed annual and prior to scheduled maintenance outages that create potential for IROLs. Please see our earlier comments about section 6 - Sanctions.

**Requirement 204 - Actions**

- 15. Do you agree with the requirement?  
 Yes                       No
  
- 16. Do you agree with the measures?  
 Yes                       No
  
- 17. Do you agree with the compliance monitoring process?  
 Yes                       No
  
- 18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204: Both requirement 1.2 and measure 2.2 are about reporting IROL violations when the time is greater than or equal to Tv. We do not agree with the equal to portion of this. To us, Tv is analogous to a speed limit. You would not report if you were equal, but only if in excess. We do not understand the reasoning for equal to being included. We do not agree with the levels of non-compliance because level 4 is based on an IROL being exceeded for a time greater or

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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equal to Tv. This does not agree with the measures listed. The measures are to document actions taken or report violations that occurred. The levels of non-compliance should be based on what we are measuring. Please see our earlier comments on Section 6 - sanctions.

This requirement in particular brought a question to mind about what the RA really is. Does this requirement assume the RA is the Reliability Coordinator of today who looks at "the big picture", or does it mean today's control area operator? It is still unclear to us what the RA really is. Is there a hole in the functional model that needs to be filled? We do not think we are the only participants in the industry still confused, so work needs to be done to clarify exactly who or what the RA is.

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes                       No

20. Do you agree with the measures?

Yes                       No

21. Do you agree with the compliance monitoring process?

Yes                       No

22. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 205: Is requirement 1.1.3 really meant to be RA's other than themselves? Again, confusion about who/what the RA really is. Depending on who/what is the RA, we may have concern over what data is being requested. There needs to be a reliability justification for the data requested. What happens if there is a disagreement over what data should be supplied? In regards to the levels of non-compliance, why only levels 1 and 2 in this requirement and level 4 in all the others? Does this imply that this standard is not as important?

Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207: We are not convinced that this requirement is needed. The requirements in 204 (Actions) seem to already cover this area. There could be many actions to take to prevent or mitigate instances of exceeding IROLs, so it could be extremely burdensome to document every conceivable action. Truly the proof is in the 204 requirement so we would suggest deleting this one.

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Comments about Requirement 208: Clarification of who is the entity responsible needs to be made throughout this requirement 208. Step 4.1 of the compliance monitoring process is not complete. It would seem that this 208 is a complement to 204. In 204 the RA is already documenting the actions directed, along with information if a violation occurred. This states that a level 4 is obtained if they did not follow directives. It would seem to make sense to only have this if they did not follow directives and a violation occurred. Perhaps consideration needs to be given to a lower non-compliance level for not documenting their actions, or lack of actions taken when given a directive.

Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments** We agree with including it in the standard because there needs to be some place for recognition of not getting the data that is needed. We are not entirely sure what steps the compliance monitor would then take, but are assuming the compliance monitor would follow up with the entity not supplying the needed information. In FRCC, if our Security Coordinator does not get the requested information, our Operating Reliability Subcommittee is informed so that follow up can take place. Ultimately, our Security Process (Reliability Plan) requires the operating entities to supply required reliability data and our ORS and OC are the back stop to ensure it is supplied.

**37. Any other comments on this standard?**

On the first page, the SDT has identified an "Effective Period". By using the term period, it implies that there will be an end time when the standard will no longer apply. Would it be more appropriate to just state an effective date?

In the applicability paragraph, the SDT has referenced the functional model approved by the BOT in June 2001. This reference causes concern. We understand that including this reference and date identifies the version of the functional model so that the understanding of the functions are based on this particular document. But, what happens when the BOT approves a change to the model at a later date? Do we now have standards based on one set of functions or understanding of functions that are different than what is in the latest functional model? This will certainly cause confusion in the industry. But, on the other hand, if you remove the date reference, then anytime the BOT changes the model, they are effectively changing the standard without going through the SAR process. We do not want the BOT to be able to change who the standards apply to without going through due process either. How do we deal with this situation?

In the comment box on this first page, the SDT has stated that the terms BA, RA etc really apply to the entities performing the functions identified in the functional model. We understand and

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appreciate why the team did this, however, there is still a lot of confusion about functions vs entities in the functional model. We would suggest that the standard include the extra words to make this distinction. For example, in 1.1 of standard 201, it should read "The entities performing the reliability authority and planning authority functions shall.." This seems trivial, but we believe it is very important in helping the industry understand the functional model and how the standards apply to the entities performing the functions.

Just a note for future comment forms, please provide a comment box after every question, not just at the end of the section on a particular standard. That way the comments and yes/no answers could be kept together.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

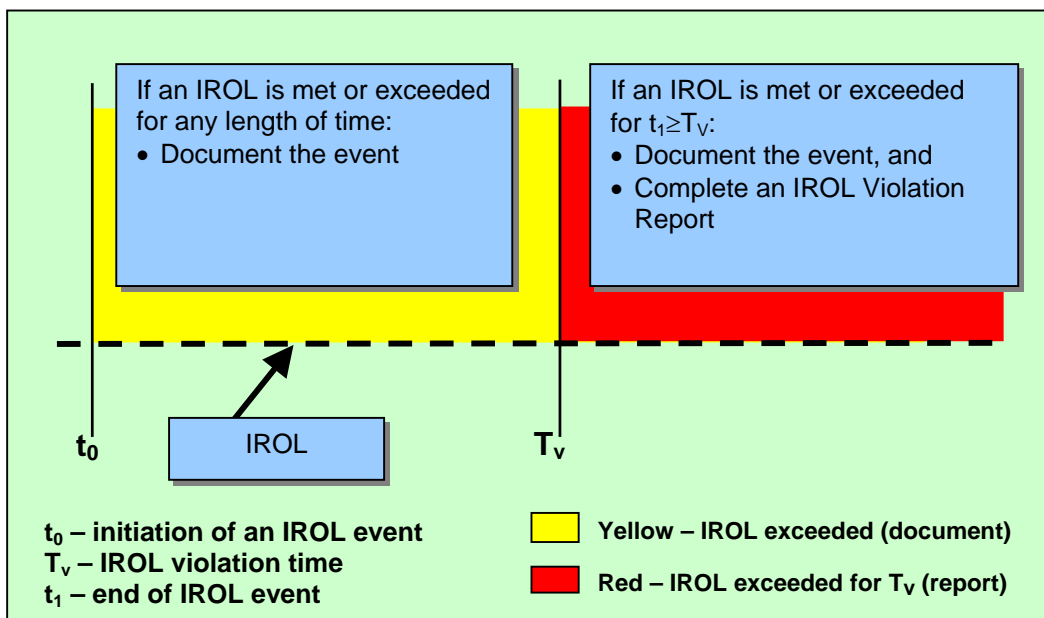
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

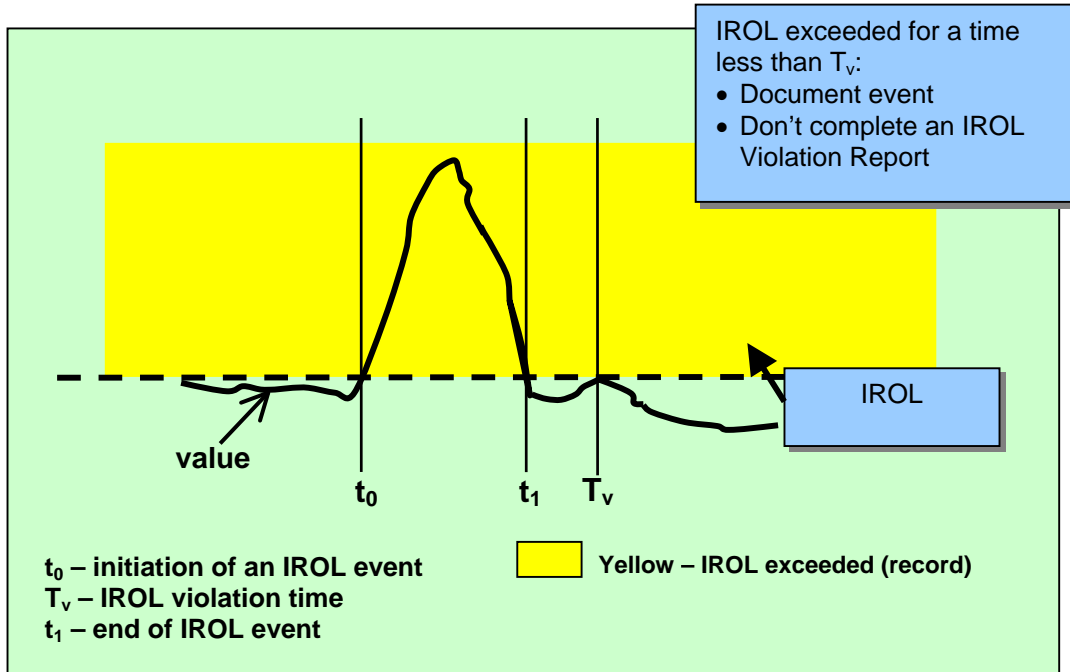
When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.



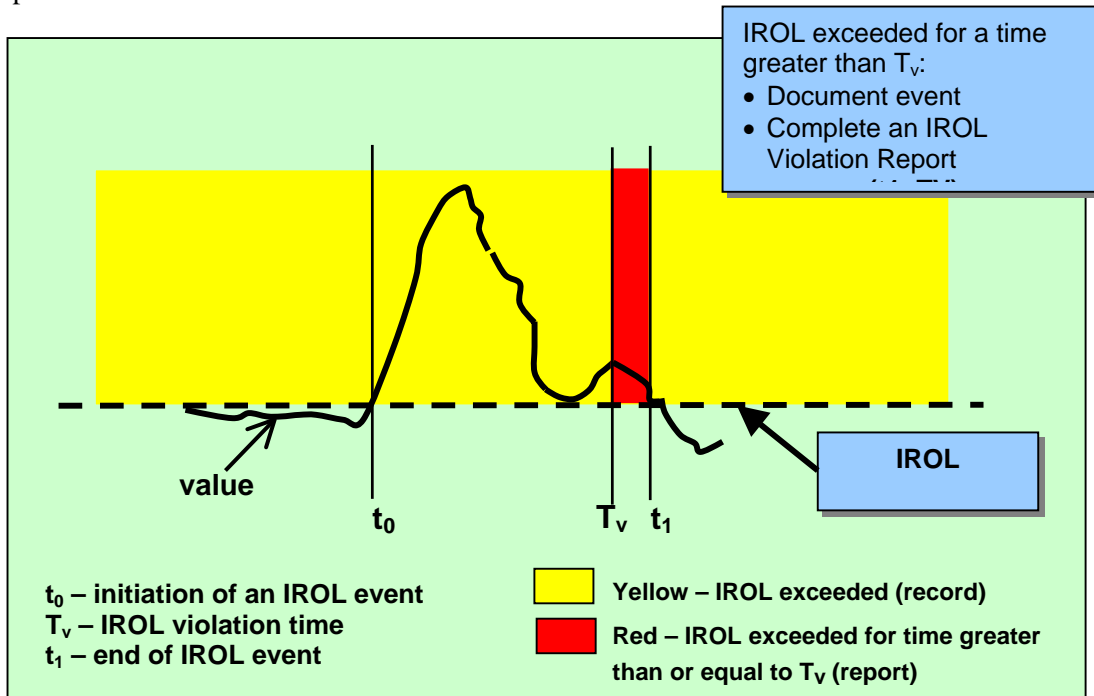


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Gerald Rheault</b>
<b>Organization</b>	<b>Manitoba Hydro</b>
<b>Industry Segment #</b>	<b>1,3,5,6</b>
<b>Telephone</b>	<b>204-487-5423</b>
<b>E-mail</b>	<b>gnrheault@hydro.mb.ca</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

The definitions which need modifications are the following:

- Interconnection Reliability Operating Limit The first sentence is the complete definition. The rest is a description of activities related to this definition and should not be included here.

- Real-time Monitoring. This should be modified to "The act of using human vision and hearing or computer software to scan various real-time data sources and draw conclusions about what the data indicates.

- Real-time The word present time should be used instead of immediate.

The words present or presently should be used instead of immediate or immediately in context to real-time in any definition contained in this Standard.

- Self-certification should be changed to " A process by which an entity does a self evaluation to determine if it is compliant with the specific requirements for a reliability standard". The rest can remain the same.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments The responsibility for monitoring IROLs, addressed in this Standard, rests with the Reliability Authority as defined in the Functional Model. However Manitoba Hydro believes there is also a reliability requirement to monitor real-time operations for all other system operating limits (SOL) which are not identified as IROLs. If it is not appropriate to include these monitoring requirements in this Standard, then another Standard should be created to address this requirement.

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201: Manitoba Hydro believes that it will be very difficult to identify the IROL subset from the SOLs determined for operation of the transmission facilities in the geographical footprint for which the RA has operational responsibility. .

Any SOL provides protection for the worst contingency, so if the limit is respected, events such as system collapse, cascading loss of lines and other major events are extremely unlikely, unless there are multiple near-simultaneous contingencies. However, most system operating limits (SOL) could lead to significant system disturbances if they are exceeded by a large amount or exceeded for a significant period of time, or both. While any SOL will have been established such that the next contingency should not have any impacts if operation is within the SOL, operation outside of the SOL, accompanied by even one contingency, could lead to cascading loss of lines (thermal limits) or system instability (voltage or angular stability limits). It is Manitoba Hydro's

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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belief that it is very difficult to identify such situations without exhaustive studies on very detailed models.

The normal approach for developing system operating limits will likely incorporate some reliability margins for dealing with some of the lack of detail (for example, overcurrent protection is often not modelled, phase shifter action is assumed to occur without being studied at all possible positions) but, if system operation is to be investigated beyond such limits, small details become very important.

It is important that NERC instil a culture of respect for limits of all types and values. There is a risk that a focus on the nebulous concept of an IROL will diffuse the respect for all other limits and the frustration of identifying such IROL's will further reduce the number classified as IROL's. NERC should clearly state how IROL's are to be identified and how NERC or the regions can address the other limits which may be important (among other things, the regional standards must either be developed through a separate standards process or flow from a NERC standard – the current proposal does not let the other limits flow from this standard).

In item 201.2.1.1 the words at the end of this sentence (that does not already have a  $T_v$ ) should be removed.

### **Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202: In 202.4.3.1, what is meant by a display ? How does one make a display available.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203: In item 203.1.1 the words “will not exceed” are used. The correct phrase should be “should not exceed” since the ability to predict is only valid for events studied, not for unanticipated system conditions.

In item 203.2.1.1, there should be a statement indicating the range of studies required. Should the contingencies applicable to SOL’s be used or should the range of studies be broader?

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:





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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208: the documentation in 4.1 is incomplete. For purpose of determining the acceptability of this item it was assumed that the intent was for the documentation to be similar to the wording for 207 item 4.1

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**35. List any Regional or Interconnection Differences for this standard:**

There should be no Regional or Interconnection Differences

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

A NERC standard is a form of legal document – it spells out the standards, the measurements, the levels of compliance and the penalties for non-compliance. As such, there should be no ambiguity, so any term defined by NERC should be clearly identified in the standard (capitalized, bold, etc.) where it is used as a defined term, or NERC must certify that all uses of a defined word are a reference to the defined term.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

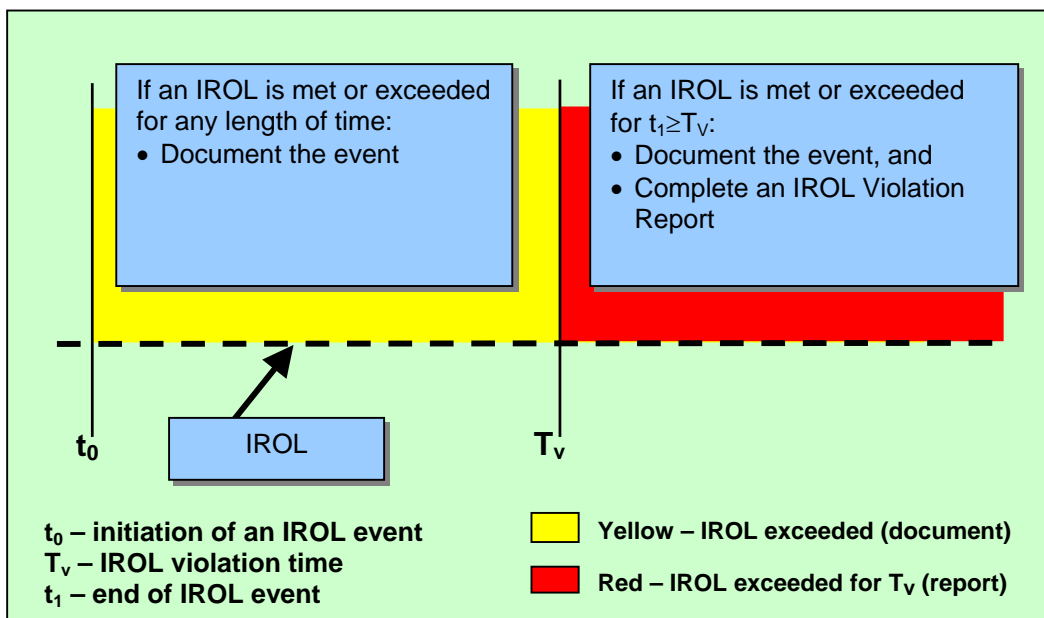
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

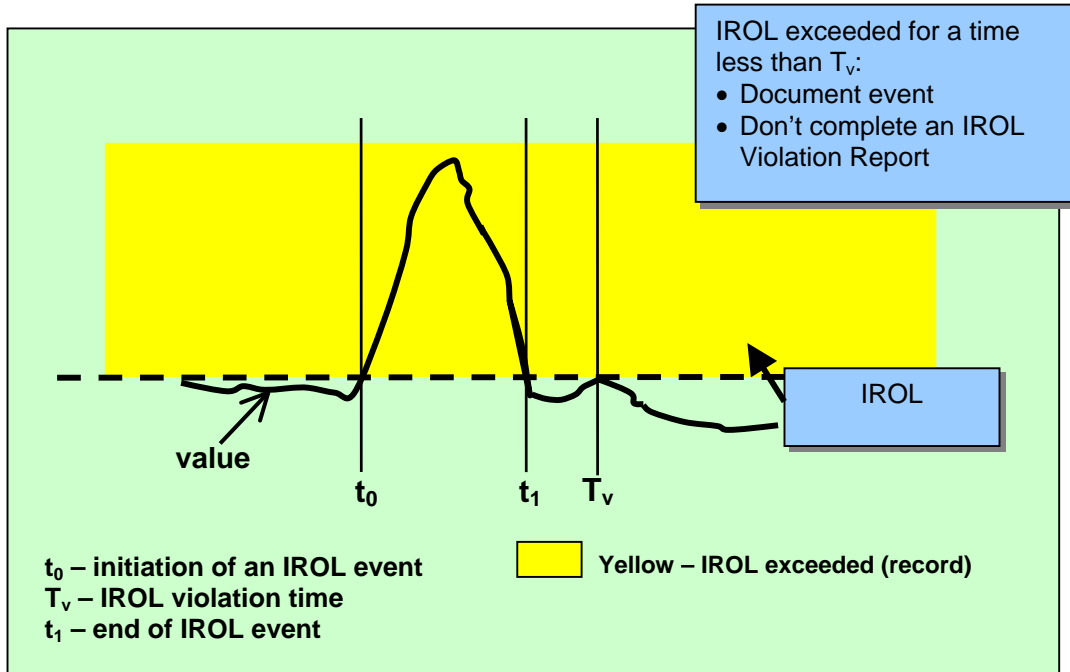
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

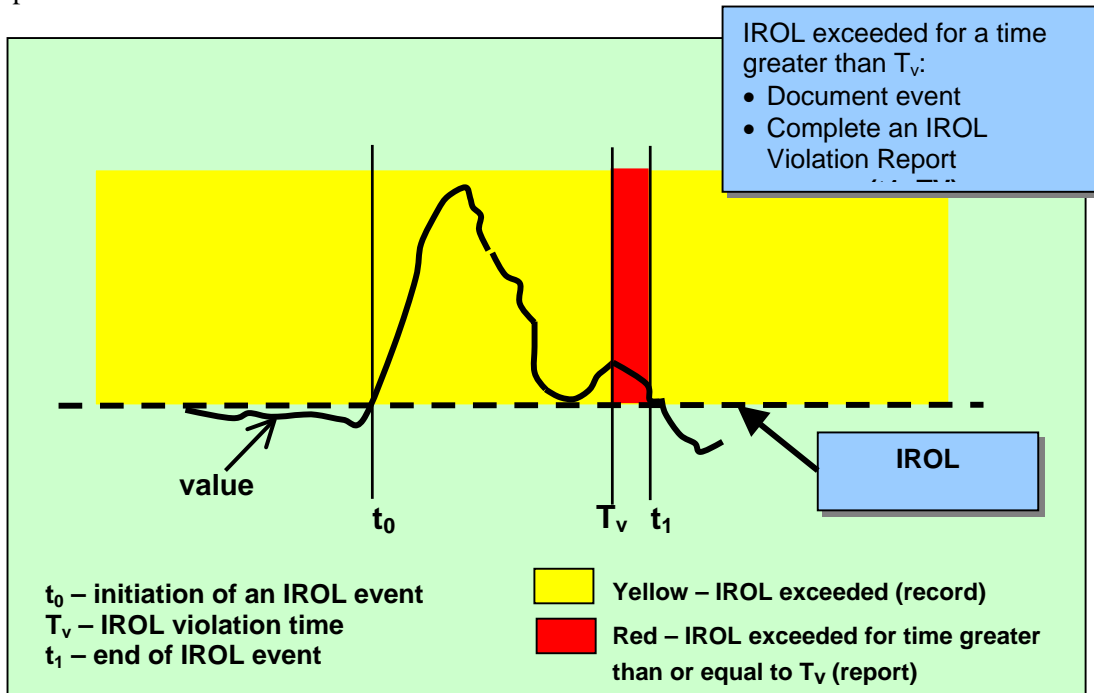


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Susan Morris</b>
<b>Organization</b>	<b>SERC</b>
<b>Industry Segment #</b>	<b>2</b>
<b>Telephone</b>	<b>(423) 843-2358</b>
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<p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Bill Reinke</i>	<i>SERC</i>	<i>2</i>
<i>Sam Stryker</i>	<i>Fayetteville PWC</i>	<i>3, 4, &amp; 5</i>
<i>Carter Edge</i>	<i>SEPA</i>	<i>4 &amp; 5</i>
<i>Bill Thompson</i>	<i>Dominion Transmission</i>	<i>1</i>

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

- **Operational Planning analyses are conducted for time periods up to 13-months into the future. Please revise the definition as follows:**

Operational Planning Analysis: “ .... An operational planning analysis is done for the next day’s operation and up to 13-months ahead of the expected conditions.”

- **The Transmission Owner has fiduciary responsibility for its owned facilities. Therefore he has ultimate responsibility and liability for owning, maintaining and operating his facilities. The Transmission Owner then is ultimately responsible for establishing system operating limits, including Tv, for his facilities. Therefore, the definition of Tv should be revised to:**

“Tv: The violation time associated with a limit that is determined by the Transmission Owner(s) for equipment-based limits, and by the Reliability Authority and Planning Authority(ies) for system-based limits.”

- **The responsibilities of the RA are to “monitor” the system, not “control” the system. Therefore, we suggest the following change:**

Reliability Authority Area: A defined electrical system bounded by interconnection (tie-line) metering and telemetry monitored by a single reliability authority.

- **Based on the following definitions, we do not believe that the definition of “Documentable Interconnection Reliability Operating Limit Violation” is necessary (is it truly a violation?). It appears that it is identical to the definition of “Interconnection Reliability Operating Limit Event” and the fact that an “event” must be documented is contained in the definition of “Interconnection Reliability Operating Limit”.**

- **Documentable Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for any length of time.
- **Interconnection Reliability Operating Limit Event:** An instance of exceeding an interconnection reliability operating limit for any length of time.
- **Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for time greater than or equal to Tv.
- **Interconnection Reliability Operating Limit:** A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to Tv. Note that Tv may be zero.

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2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments:

This should not preclude the Transmission Operator(s) from conducting independent analysis.

This draft standard does not recognize that the TO has fiduciary responsibility for its owned facilities and neither NERC standards, nor the Functional Model, can take that responsibility and liability away. This fiduciary responsibility requires the TO to establish thermal ratings, and associated Tv, for its equipment and then monitor that equipment. If those thermal ratings are the lesser of the thermal, stability or voltage limits, then the TO has established the IROL limit. Therefore, we suggest the requirements identified in this standard are not redundant requirements but are requirements met by several entities (functions), not met by one entity (function).

It should also be acknowledged that entities such as the RA and the TO(s) may delegate their respective monitoring responsibilities to the TOP.

The following is an excerpt from page three of this document: *“This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority.”* For TOs/TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived, this standard does not result in any entity assuring that bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by a standard.

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

The statements in sections 1.1.1 and 1.1.2 imply that the Planning Authority Area is the same size as the Reliability Authority Area. Entities that currently perform planning authority functions do not cover the same geographical area as their respective reliability authorities. The statements should be changed as follows: “The reliability authority and planning authority(ies) shall...”

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity

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as a shared activity between the TO(s), RA, PA(s), TSP, and TOP(s), and recommend all functional entities be identified in Standard 201 part 1.1 and 1.2.

What happens if you identify another (unexpected) limit during real-time that is not on the list? Are you not responsible for this case as well? We all know that planning studies cannot predict all the challenges that are faced in real-time.

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. This Standard could be improved by formatting (where possible) Measurement 2.1 to relate to Requirement 1.1 and Measurement 2.2 to relate to Requirement 1.2, etc. rather than listing the measures and requirements arbitrarily and independently.

In order to tie the OEC's to the Measures, Section 4 should be clarified to read:

4.3. The entity responsible shall have the following Objective Evidence for Compliance available upon the request of its compliance monitor:

- 4.3.1. List of interconnection reliability operating limits for the reliability authority's reliability area **as described in Measure 2.1 above**
- 4.3.2. List of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits **as described in Measure 2.2 above**

### **Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
- 8. Do you agree with the measures?  
 Yes                       No
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No
- 10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 202 be replaced with "reliability authority and transmission owner(s)".

It should also be acknowledged that entities such as the RA and the TO(s) may delegate their respective monitoring responsibilities to the TOP(s).

In addition, it appears from the wording of this draft standard Section 202 Monitoring, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:

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- 1.1. The reliability authority shall monitor real-time system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measures it supports. It may be a practical solution that the real-time data and interconnection reliability operating limits be made available to operators in the form of a "display", however this solution is not prescribed in the measures and should not be listed exclusively.

We suggest that section 4.3.1 be rewritten to read:

- 4.3.1. Process used for monitoring and comparing real time data associated with interconnection reliability operating limits in accordance with Measure 2.3 above. This may be accomplished through the use of an operator display and should demonstrate compliance with Measures 2.1 and 2.2.

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### Requirement 203 - Analyses and Assessments

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 203 be replaced with "reliability authority and transmission owner(s)".

In addition, it appears from the wording of this draft standard Section 203 Analysis and Assessments, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:

- 1.1. The reliability authority shall perform operational planning analyses to verify that the planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.

The wording of Item 1.2 should also be revised to make it clear the RA and TO(s) verify the power system operation is not exceeding IROL limits:

- 1.2. The reliability authority shall perform real-time assessments to verify that **the power system** it is not exceeding any interconnection reliability operating limits. **The transmission owner(s) shall perform real-time assessments to verify its equipment is not exceeding any interconnection reliability operating limits.**

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

- 4.3. **The reliability authority shall demonstrate in accordance with Measure 2.1, the following upon the request of the compliance monitor:**
- 4.3.1. **Ability to perform an operational planning analysis**  
4.3.2. **Ability to perform a real time assessment**

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### Requirement 204 - Actions

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

We have a general concern that the Reliability Authority is the only function held responsible for instances where the IROL is exceeded. Currently, not all RAs have operating responsibility over their systems. Some functions are delegated. With this in mind, the levels of non-compliance would pertain only to RAs, while they may not have direct control. For instance, the operating entities could choose not to follow the RA's direction. It seems that there should be a complementary standard that would penalize operating entities for not adhering to the direction of the RA. The penalties should be ranked according to the severity of the situation. In other words, the entities that actually have the operating responsibility must be held accountable.

Has the Interconnection Reliability Operating Limit Violation Report been developed yet? Is this the existing NERC Operating Policy 5, Appendix 5F as modified with the results of the Reliability Coordinator IRLV Field Test? Will this report become part of this standard?

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

In section 2, the measures do not capture the requirement to PREVENT instances where IROLs may be exceeded. The following re-wording is suggested. Section 4, below is also slightly modified to align with change in the measurement.

**2.1. The reliability authority shall document each instance where actions are taken to prevent exceeding or to mitigate the magnitude and duration of interconnection reliability operating limit:**

2.1.1. The reliability authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)

2.2. The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ :

2.2.1. The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five business days of the initiation of the event. (The report includes the date and time of the event, identification of which interconnection reliability operating limit was violated and the  $T_v$  for that limit, magnitude

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and duration of exceeding the interconnection reliability operating limit, actions taken or directives issued, and explanation of results of actions or directives.)

4.3. The reliability authority shall have the following available upon the request of its compliance monitor:

4.3.1. Operations logs or other documentation **in accordance with Measure 2.1 indicating the magnitude and duration of each interconnection reliability operating limit event** and the actions or directives issued for each of these instances

4.3.2. Interconnection Reliability Operating Limit Violation Reports **completed in accordance with Measure 2.2**

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes  No

20. Do you agree with the measures?

Yes  No

21. Do you agree with the compliance monitoring process?

Yes  No

22. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 205:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 205 be replaced with "reliability authority and transmission owner(s)".

The requirement for data collection should be tied to its impact on reliability. Requirement 1.3 should be modified to read:

1.3. The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority does not provide data as specified **and this lack of data has an impact on reliability.**

Measurement 2.3.1 should be rewritten to read:

2.3.1. The notification shall take place within five business days of discovering that the data **having an impact on reliability** is missing.



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In order to prevent a shotgun approach to data collection we propose Section 2.1.1 be modified to read:

- 2.1.1. Specification shall include a list of **minimum** required data, a mutually agreeable format, and timeframe and periodicity for providing data.

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

- 4.3. The reliability authority shall have the following available upon the request of the compliance monitor:
  - 4.3.1. Data specification(s) **in accordance with Measure 2.1**
  - 4.3.2. Proof of distribution of the data specification(s) **in accordance with Measure 2.2**

**Requirement 206 - Data Provision**

- 23. Do you agree with the requirement?  
 Yes                       No
- 24. Do you agree with the measures?  
 Yes                       No
- 25. Do you agree with the compliance monitoring process?  
 Yes                       No
- 26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 206 be replaced with "reliability authority and transmission owner(s)".

Add planning authority(ies) to the list of functions in section 1.1.1 that have a reliability relationship and shall provide data (particularly results of dynamic analysis) to the reliability authority and transmission owner(s).

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measure it supports. A possible solution might be:

- 4.3.1. **Documentation** indicating data was sent to the reliability authority **in accordance with Measure 2.1**

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Non-compliance in data submission could take several forms and levels of impact to reliability. Section 5 should be modified as follows:

5. Levels of Non-compliance:

- 5.1. Level one: **Data was provided, but not in the mutually agreed format**
- 5.2. Level two: **Data was provided, but not within the time-frame specified**
- 5.3. Level three: **Incomplete data was provided**
- 5.4. Level four: Data **was** not provided to the reliability authority as specified.

### Requirement 207 - Action Plan

27. Do you agree with the requirement?

- Yes                       No

28. Do you agree with the measures?

- Yes                       No

29. Do you agree with the compliance monitoring process?

- Yes                       No

30. Do you agree with the levels of non-compliance?

- Yes                       No

Comments about Requirement 207:

Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 207 be replaced with "reliability authority and transmission owner(s)".

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. The Levels of non-compliance should be objectively determined based on the evidence.

Measure 2.1 should be modified to include:

- 2.1. The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall **identify and** be coordinated with those entities responsible for acting and with those entities impacted by such actions.

Section 4.3 should be modified to include:

- 4.3. The reliability authority shall make the following available for inspection by the compliance monitor upon request:
  - 4.3.1 Action plan **developed in accordance with Measure 2.1**

Section 5 should be modified to include:

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5. Levels of Non-compliance

- 5.1. Level one: Action plan exists but wasn't coordinated with all involved and impacted entities
- 5.2. Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities
- 5.3. Level three: **Action plan is incomplete**
- 5.4. Level four: No action plan

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

- Yes                       No

32. Do you agree with the measures?

- Yes                       No

33. Do you agree with the compliance monitoring process?

- Yes                       No

34. Do you agree with the levels of non-compliance?

- Yes                       No

Comments about Requirement 208:

We believe the wording of this draft standard Section 208 Reliability Authority Directives, 1. Requirements, Item 1.1 is restricted to too few entities, needs to be expanded to encompass all functions and users of the power system, should recognize the RA is required to issue directives consistent with applicable tariffs and contract, and the RA is required to use Good Utility Practices. This requirement must be reworded:

**1.1. The reliability authority shall use applicable tariffs, contracts, and Good Utility Practice when directing use of the power system and all users of the power system shall follow the reliability authority's directives to:**

1.1.1.1. Prevent instances where interconnection reliability operating limits may be exceeded

1.1.1.2. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Non-compliance could take several forms and levels of impact to reliability. The Levels of non-compliance should be objectively determined based on the evidence.

Section 4.3.1 should be modified to read:

4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:

4.3.1.1. Date and time of each of directive received

4.3.1.2. Directive issued

4.3.1.3. Actions taken in response to directive **in accordance with Measure 2.1**

Section 5 should be modified as follows:

5. Levels of Non-compliance

5.1 Level one: **Operations log or other data source(s) do not show one of the following:**

5.1.1 **Date and time of each of directive received**

5.1.2 **Directive issued**

5.1.3 **Actions taken in response to directive**

5.2 Level two: **Operations log or other data source(s) do not show any of the following:**

5.1.4 **Date and time of each of directive received**

5.1.5 **Directive issued**

5.1.6 **Actions taken in response to directive**

5.3 Level three: Not applicable.

5.4 Level four: Did not follow directives.

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### 35. List any Regional or Interconnection Differences for this standard:

None

### 36. Notifying the Compliance Monitor

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments:** We believe that it is appropriate to include this in the standard with the comments noted in Section 205.

### 37. Any other comments on this standard?

- Please note that throughout the standard the Tv term is used but is not formatted the same (Tv vs. T<sub>v</sub>). This is a minor, formatting issue, but should be consistent throughout to reduce confusion.
- Two definitions should be changed based on our comments:

**Reliability Authority Area:** A defined electrical system bounded by interconnection (tie -line) metering and telemetry **monitored by** a single reliability authority.

**Tv:** The violation time associated with a limit **that is determined by the Transmission Owner(s) for equipment-based limits and by the Reliability Authority and the Planning Authority(ies) for system-based limits.**

- We are becoming increasingly concerned about this standard development process. This and other standards are being developed based on certain definitions and assumptions contained in the Functional Model. These “standards” will become fixed such that the industry will be held accountable to and measured by these standards. However, the Functional Model and the definitions contained in that revised model are changing and will not necessarily be the same as those used to develop the standards. What is the process for reviewing, revising and implementing changes to the Functional Model, and the impact of those changes on all these standards that have been developed based on the old Functional Model? Are the changes to the Functional Model being vetted by all industry

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participants before implementation? What is the process to revise these standards prior to implementing changes to the Functional Model?

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

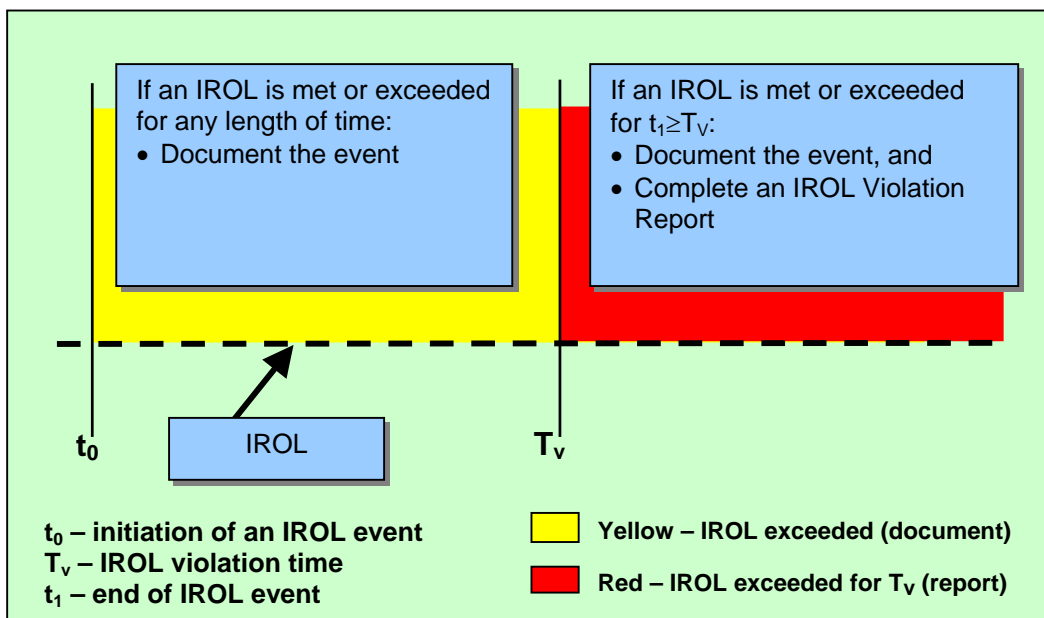
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

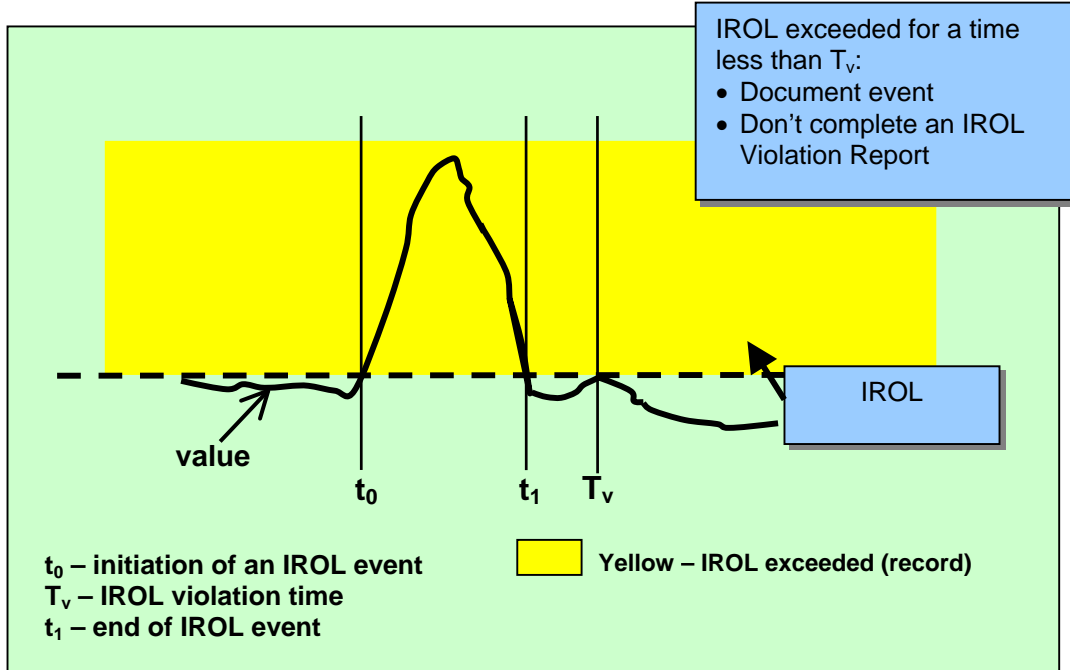
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

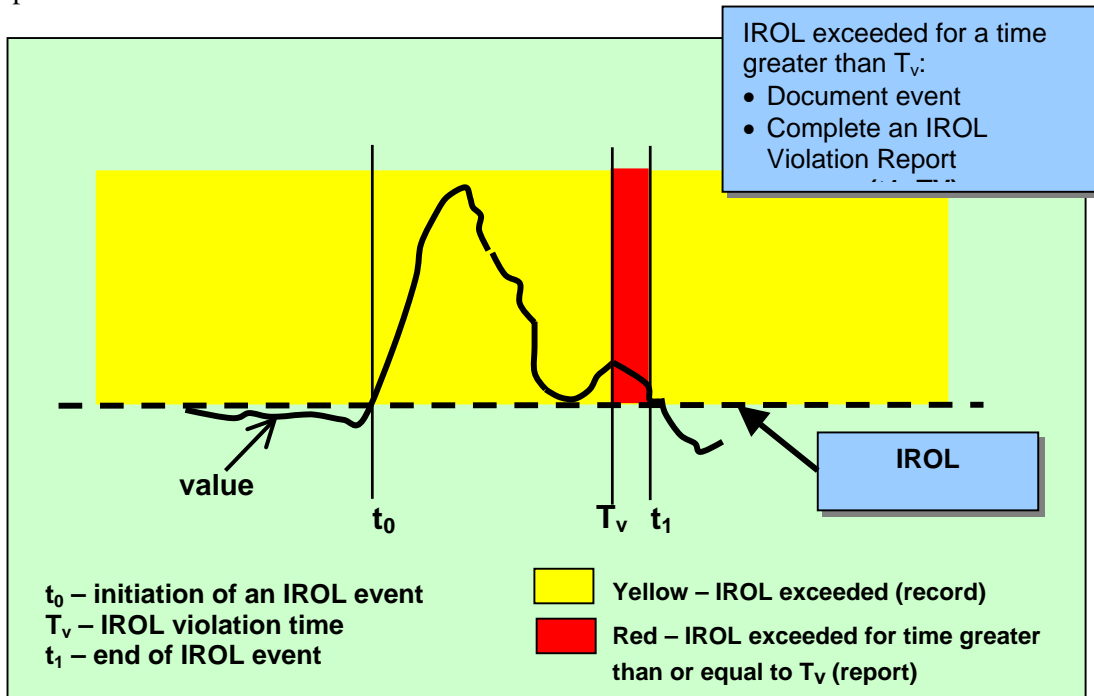


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.





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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
X Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
X Yes                       No
4. Do you agree with the measures?  
 Yes                      X No
5. Do you agree with the compliance monitoring process?  
 Yes                      X No
6. Do you agree with the levels of non-compliance?  
 Yes                      No

Comments about Requirement 201: It is unclear what a “responsible entity” is. Why are the functional model “functions” not specifically referenced in the “Measures” and “Compliance Monitoring Process” sections? Specific functions should be identified to eliminate conflict and dispute.

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
X Yes                       No
8. Do you agree with the measures?  
X Yes                       No
9. Do you agree with the compliance monitoring process?  
X Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                      X No

Comments about Requirement 202: Please consider having compliance levels 1 thru 3 for this Requirement. It may be beneficial for reliability to progressively measure adherence to the Requirements for situations where a RA is implementing a phased in start up of operations or transition from existing systems to new systems.

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
X Yes             No
12. Do you agree with the measures?  
X Yes             No
13. Do you agree with the compliance monitoring process?  
X Yes             No
14. Do you agree with the levels of non-compliance?  
X Yes             No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
X Yes            No
16. Do you agree with the measures?  
X Yes            No
17. Do you agree with the compliance monitoring process?  
X Yes            No
18. Do you agree with the levels of non-compliance?  
X Yes            No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes            X No
20. Do you agree with the measures?  
 Yes            X No
21. Do you agree with the compliance monitoring process?  
 Yes            X No
22. Do you agree with the levels of non-compliance?  
 Yes            X No

Comments about Requirement 205: The data obtained through this reliability requirement have significant commercial significance. NERC must ensure that the entities who receive such information have their employees maintain confidentiality of the data from market participants including their affiliated generators, transmission providers, load serving entities, marketers or other relevant market participants. Although a confidentiality agreement or confidentiality requirement is

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not a specific reliability need, NERC must be cognizant of and sympathetic to these commercial concerns in its reliability requirements. The confidentiality agreement itself may be developed and administered through some other standard setting organization.

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207: The requirement is silent on whether the Action Plan must comply with any tariff or market requirements. As written, it is allowable for an RA to submit a "command and control" schedule reduction or load-shedding procedure as its Action Plan to meet this Requirement. Reliant understands that NERC believes such Action Plans have significant commercial consequences and should be developed by other standard setting organizations. However, without the RA and control area operators' agreement that such Action Plans are effective, the industry effort to develop such plans will be slow and cumbersome. Reliant recommends that this SDT coordinate with the appropriate standards setting organization(s) to ensure the Action Plans are effective. Further, this Requirement should include a requirement that these Action Plans are the primary means of mitigating Reliability Operating Limit violations and not a "command and control" or "Emergency" procedure.

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                      X No
32. Do you agree with the measures?  
 Yes                      X No
33. Do you agree with the compliance monitoring process?



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Yes                      X No

34. Do you agree with the levels of non-compliance?

Yes                      X No

Comments about Requirement 208: The RA should have contractual arrangements in place with generators, transmission providers, control area operators and any entity that is required to respond to the "Actions" and "Action Plan" that expressly provides the RA the authority to execute this Requirement.

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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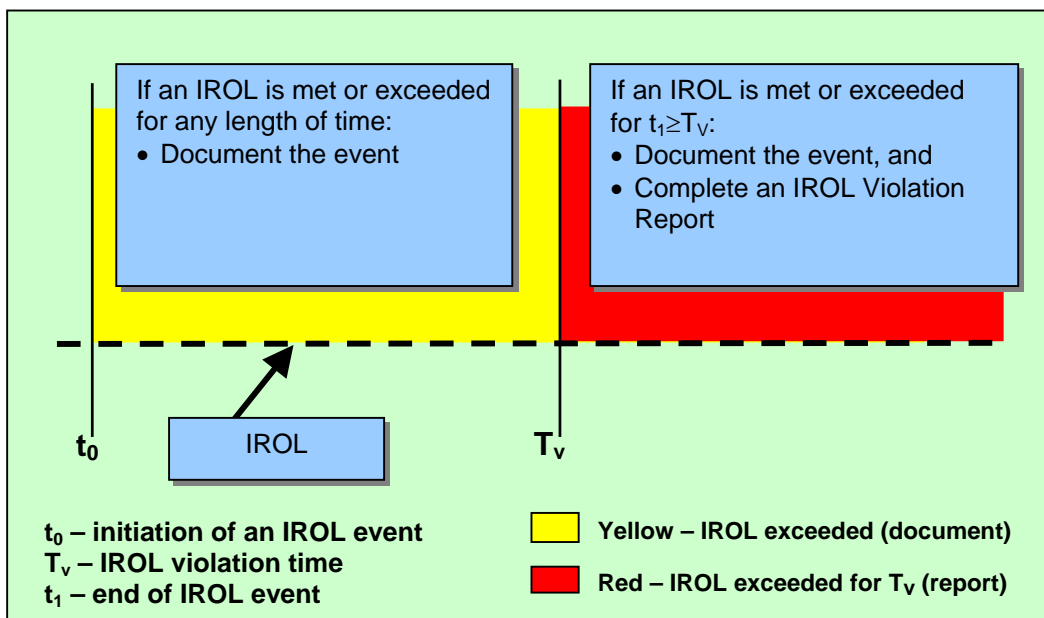
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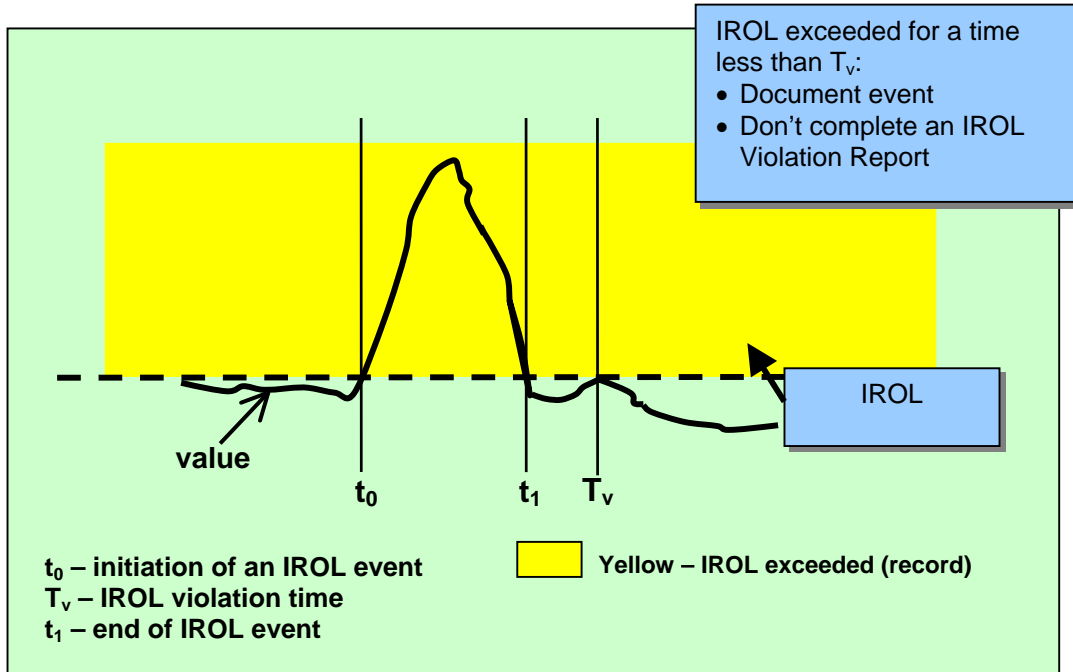
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When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

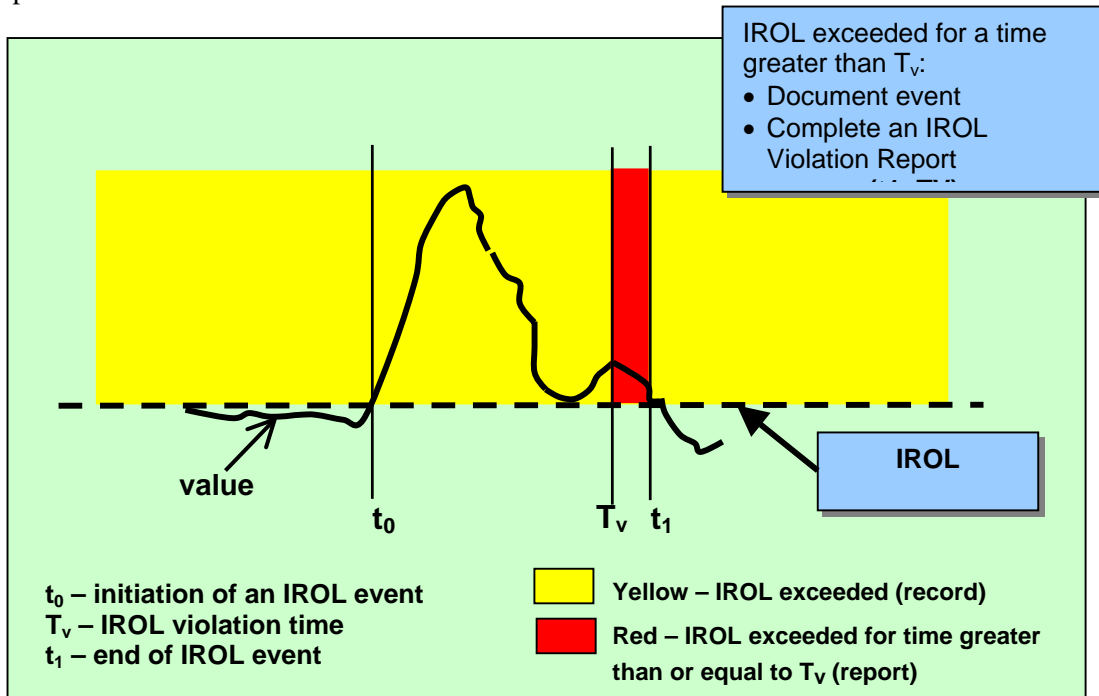


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

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**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
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**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!





**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208: **Opinion within ATC was divided over requirement 208. One side could agree with the requirement, its measures, and its monitoring process. The other side could not agree and specifically cited 208.1.2, 208.2.1, and 208.2.2, and those requirements to document directives and actions taken, as onerous.**

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

None.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

**Note** – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

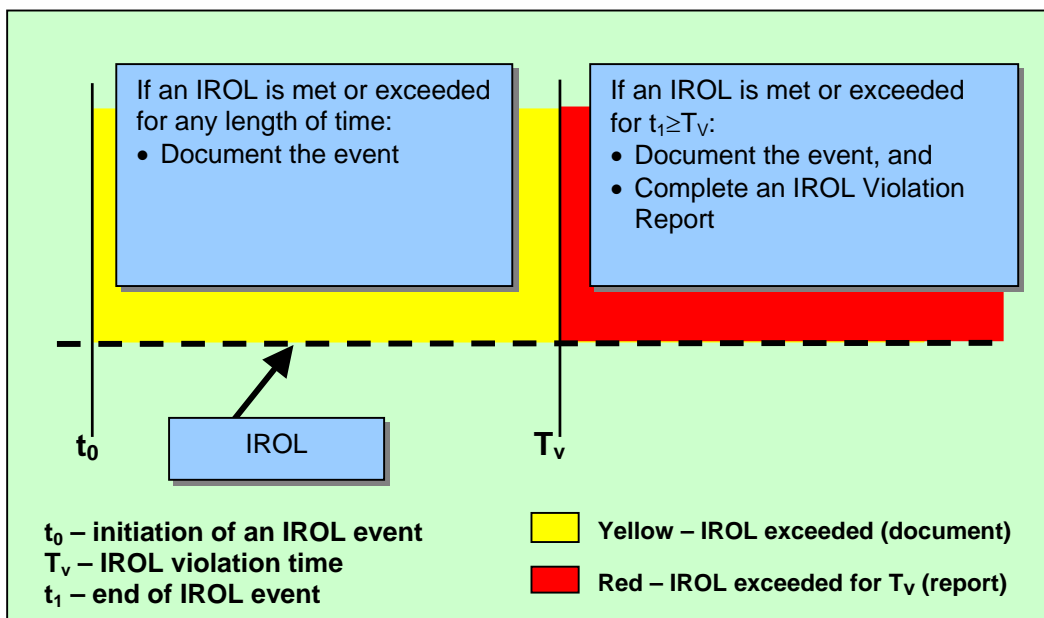
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

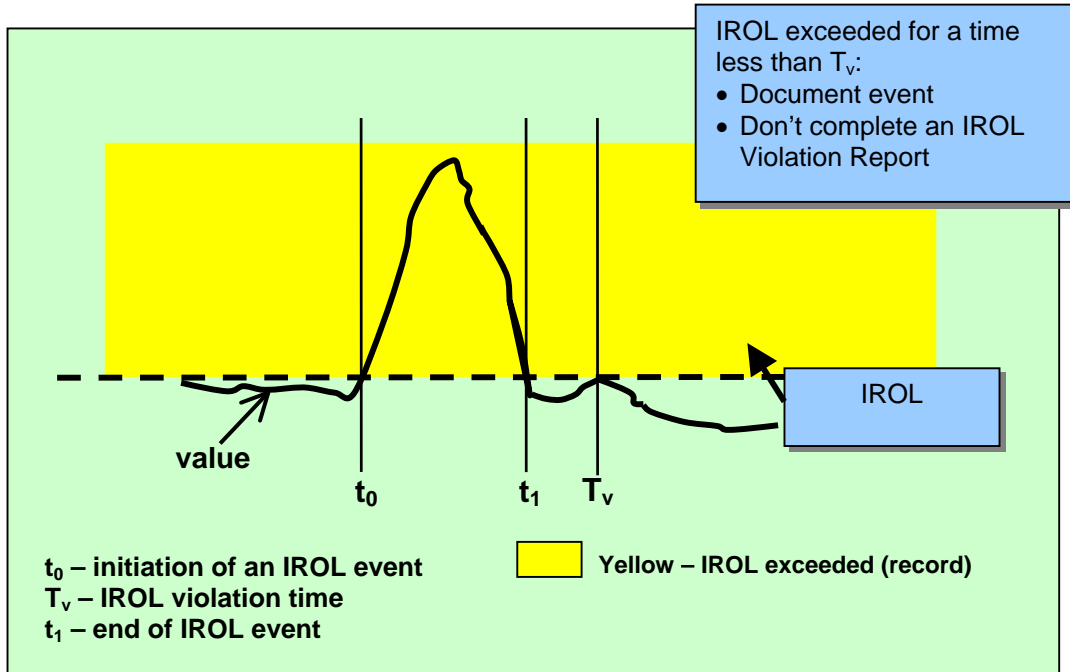
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

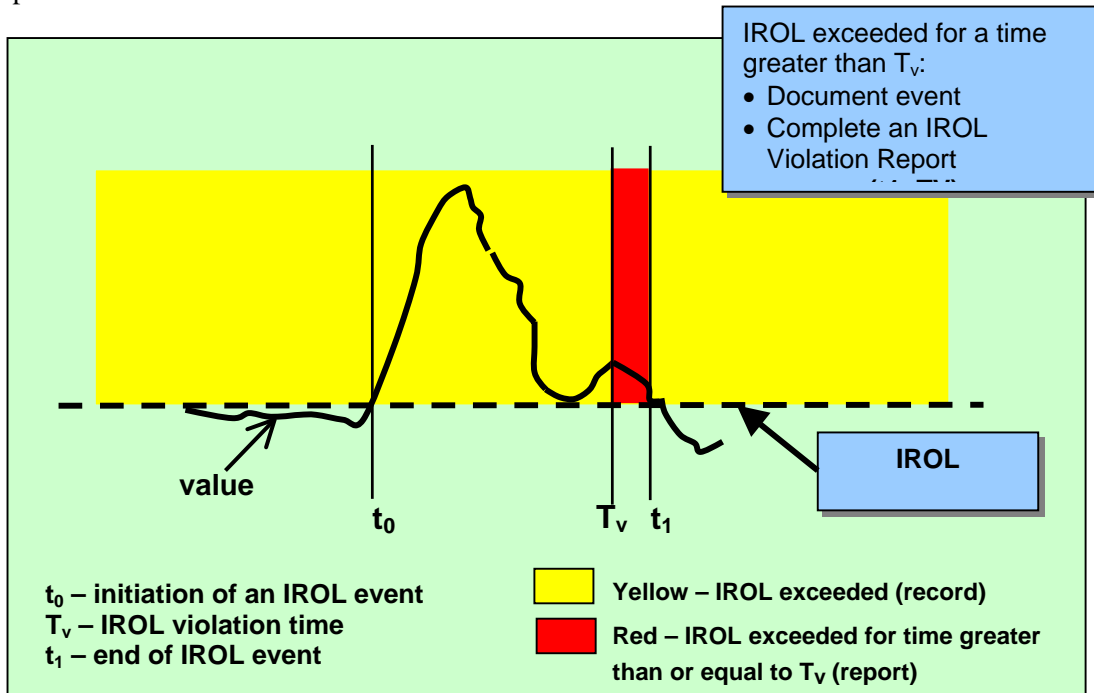


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<b>STD Commenter Information (For Individual Commenters)</b>		<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
<b>Name</b>	Monroe Landrum	
<b>Organization</b>	Southern Company	
<b>Industry Segment # 1</b>		
<b>Telephone</b>	205-257-6936	
<b>E-mail</b>	mjlandru@southernco.com	

<b>SAR Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>Southern Company Transmission Planning</i>		<b>Group Representative:</b> <i>Todd Lucas</i>
		<b>Representative Phone:</b> 404-506-3564
		Representative Email: <b>telucas@southernco.com</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Todd Lucas</i>	<i>Southern Co</i>	1
<i>Joe Payne</i>	<i>Mississippi Power Company</i>	1
<i>Travis Koval</i>	<i>Southern Co</i>	1
<i>Bill Pope</i>	<i>Gulf Power Company</i>	1
<i>John Clark</i>	<i>Southern Co</i>	1
<i>David Johnson</i>	<i>Savannah Electric</i>	1
<i>Mike Miller</i>	<i>Southern Co</i>	1
<i>Jim Griffith</i>	<i>Southern Co</i>	1
<i>Monroe Landrum</i>	<i>Southern Co</i>	1

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.  
The term "Documentable Interconnection Reliability Operating Violation" is never used in the standard and has the same definition as "Interconnection Reliability Operating Event". Likewise, the term "Reportable Interconnection Reliability Operating Violation" is never used in the standard and has the same definition as "Interconnection Reliability Operating Violation". We suggest that the terms "Documentable Interconnection Reliability Operating Violation" and "Reportable Interconnection Reliability Operating Violation" be deleted from the list of definitions.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No

Comments It is not clear to us that the Transmission Operator would never be responsible for performing the requirements included in this standard. Similar to Standard 600, this requirement could apply to "the areas for which they are responsible".

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201: Should Transmission Owner be added to this??

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Comments about Requirement 202: The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203: The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205: The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206: The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### 35. List any Regional or Interconnection Differences for this standard:

We do not currently know of any Regional or Interconnection Differences at this time. However, during the initial phasing in of standards each region may find adopting or developing a different approach provides increased reliability. Therefore, we believe that differences should be considered as they are identified in the future.

### 36. Notifying the Compliance Monitor

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

### 37. Any other comments on this standard?

This standard should not be brought to ballot until the Planning Authority is defined in the Functional Model since the Planning Authority is assigned requirements in this standard.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

**Note** – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

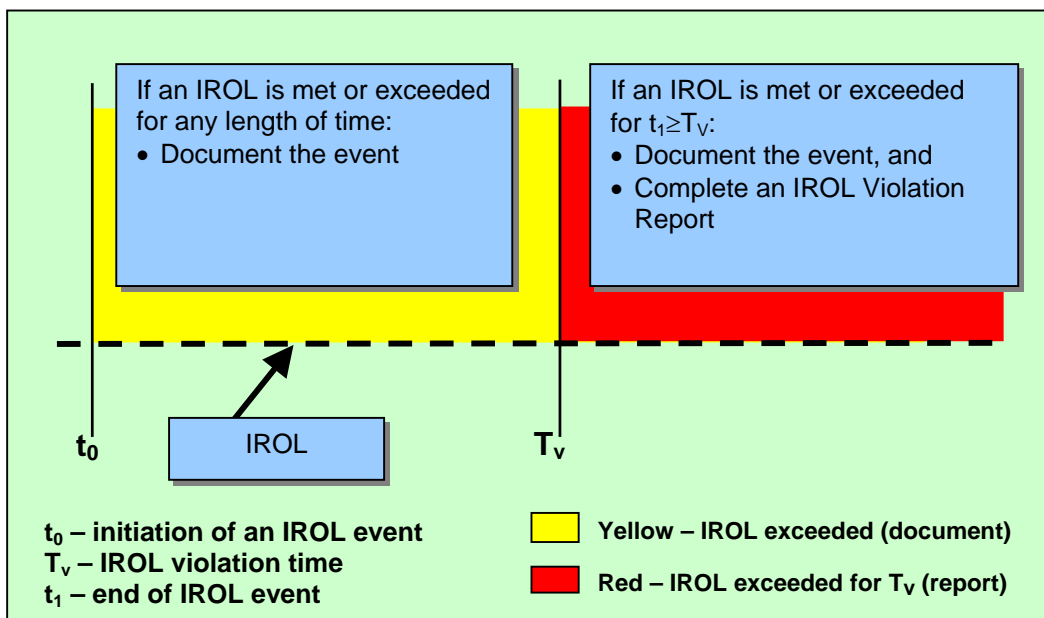
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

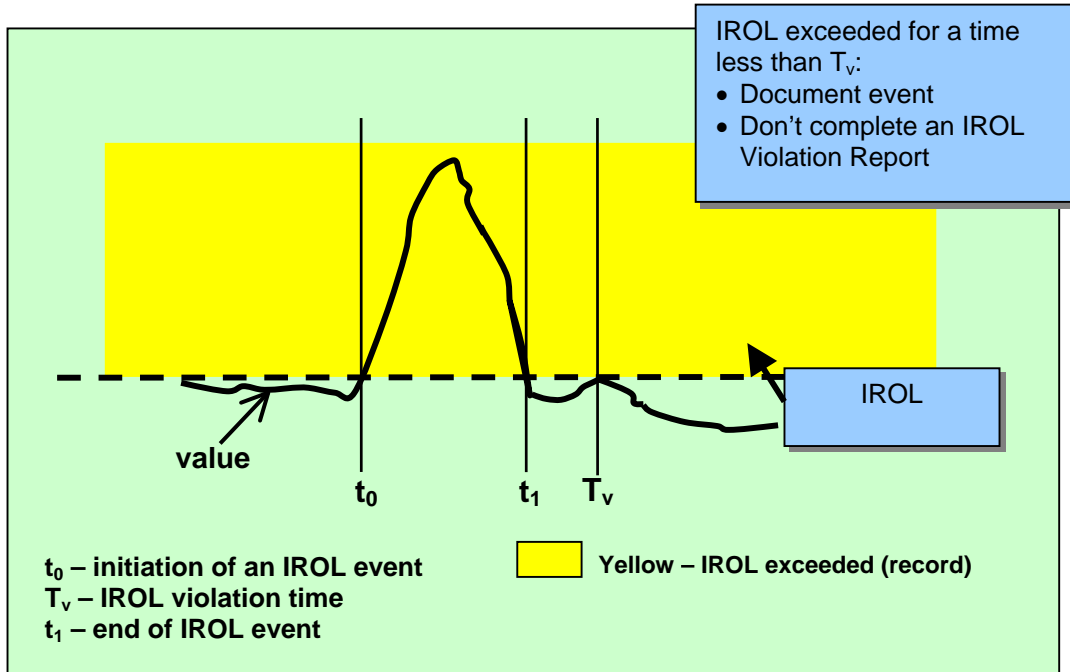
When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.



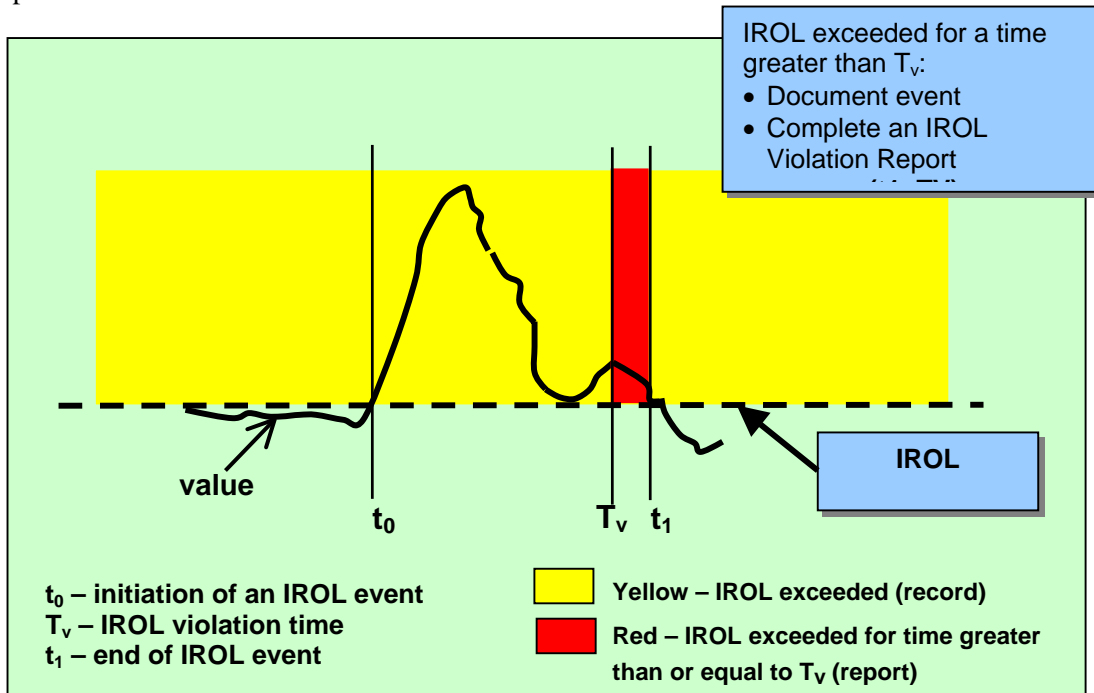


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

In the definition of **cascading outages** the term “**beyond an area predetermined by appropriate studies**” should be specifically defined. Suggestion: “**beyond the control area of the initial disturbance**”.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments:

Page 3, paragraph 3 says: “**Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages**”. Considering the events leading to the recent blackout, this section may have to be revised. Suggestion: allow a system to exceed local operating limits only if a controlled islanding scheme is in place, which can be shown to prevent cascading for the operating condition in question.

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

### Requirement 202 - Monitoring

7. Do you agree with the requirement?

Yes                       No

8. Do you agree with the measures?

Yes                       No

9. Do you agree with the compliance monitoring process?

Yes                       No

10. Do you agree with the levels of non-compliance?

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Yes                       No

Comments about Requirement 202:

**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?

Yes                       No

12. Do you agree with the measures?

Yes                       No

13. Do you agree with the compliance monitoring process?

Yes                       No

14. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?

Yes                       No

16. Do you agree with the measures?

Yes                       No

17. Do you agree with the compliance monitoring process?

Yes                       No

18. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes                       No

20. Do you agree with the measures?

Yes                       No

21. Do you agree with the compliance monitoring process?

Yes                       No

22. Do you agree with the levels of non-compliance?

Yes                       No

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Comments about Requirement 205:



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208: [Suggestion: Include generator operator in section 1.1](#)

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

None

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
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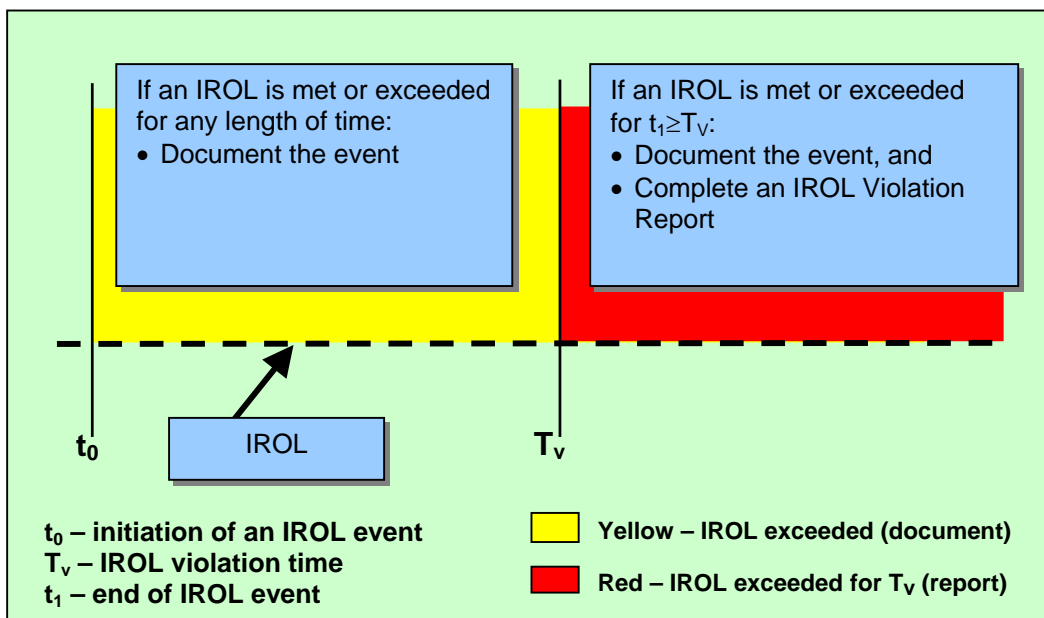
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### Major Changes to this Standard:

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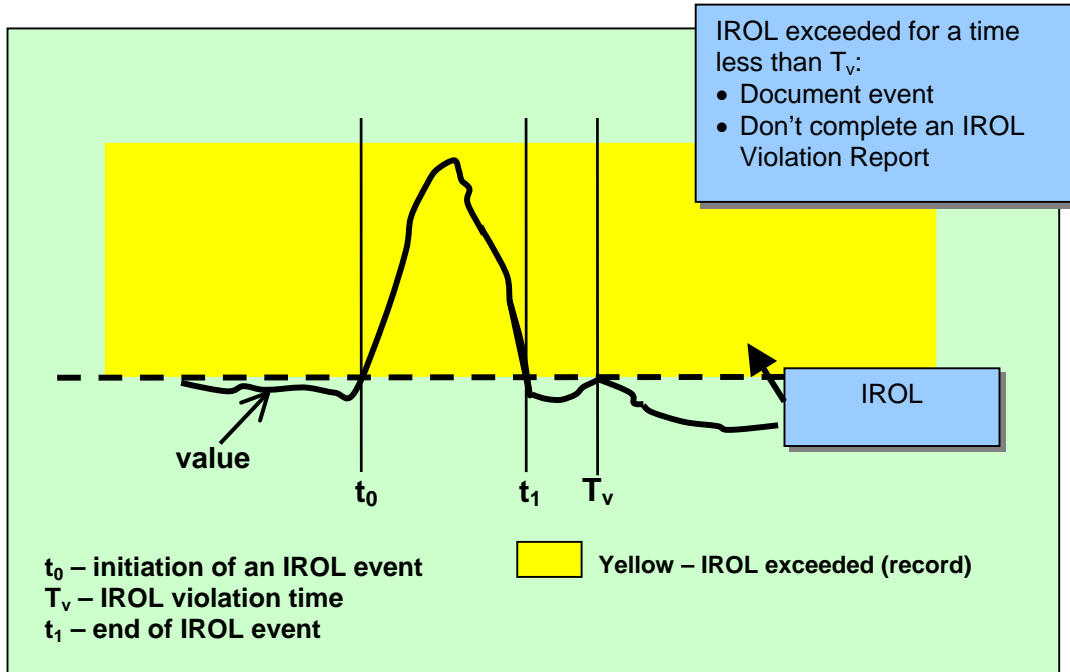
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

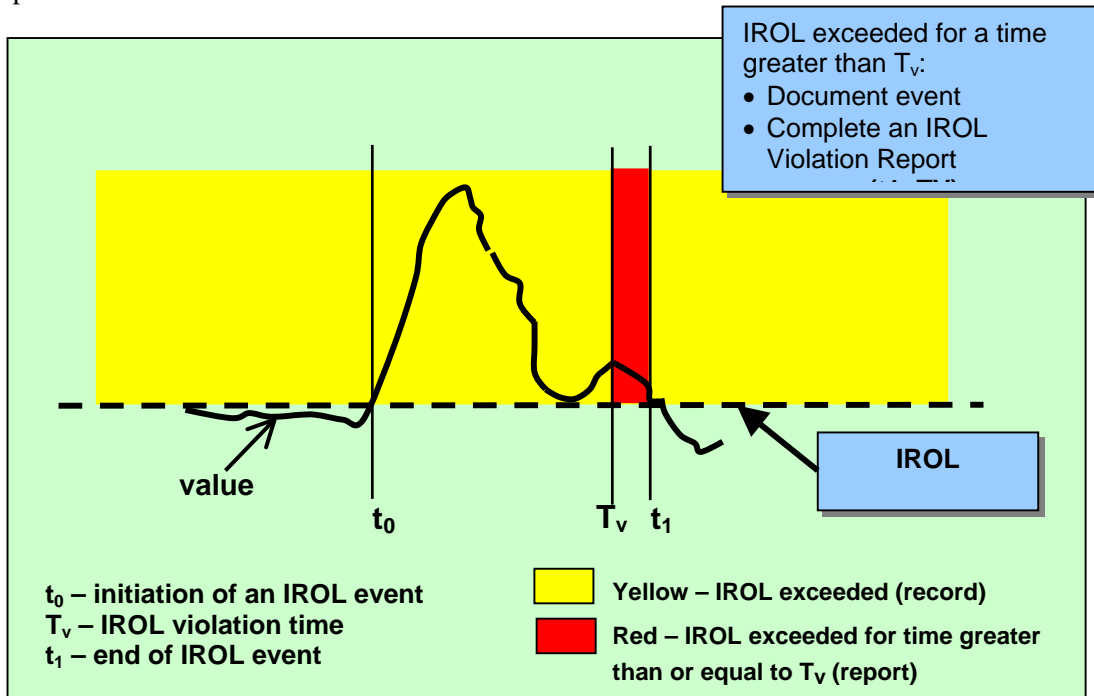


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!





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### Background

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

- **Reliability Authority does not have “control” of the system, but provides direction to the asset owners/operators. Therefore, suggest the following change:**

Reliability Authority Area: A defined electrical system bounded by interconnection (tie-line) metering and telemetry under the direction of a single reliability authority.

- **The definition of “Documentable Interconnection Reliability Operating Limit Violation” appears to be redundant to the definition of “Interconnection Reliability Operating Limit Event.” Suggest deletion of “Documentable Interconnection Reliability Limit Violation.”**
2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments:

This standard should be modified to specify non-redundant requirements for the TO responsibilities for operating within system operating limits or a separate standard created for this issue.

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

The statements in sections 1.1.1 and 1.1.2 imply that the Planning Authority Area is the same size as the Reliability Authority Area. Entities that perform planning authority functions may not cover the same geographical area as their respective reliability authorities. The statements should be changed as follows: “The reliability authority and planning authority(ies) shall...”

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. This Standard could be improved by formatting (where possible) Measurement 2.1 to relate to Requirement 1.1 and Measurement 2.2 to relate to Requirement 1.2, etc. rather than listing the measures and requirements arbitrarily and independently.

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In order to tie the OEC's to the Measures, Section 4 should be clarified to read:

4.3. The entity responsible shall have the following Objective Evidence for Compliance available upon the request of its compliance monitor:

- 4.3.1. List of interconnection reliability operating limits for the reliability authority's reliability area **as described in Measure 2.1 above**
- 4.3.2. List of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits **as described in Measure 2.2 above**

**Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
- 8. Do you agree with the measures?  
 Yes                       No
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No
- 10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

It appears from the wording of this draft standard Section 202 Monitoring, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:

- 1.1. The reliability authority shall monitor real-time system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measures it supports. It may be a practical solution that the real-time data and interconnection reliability operating limits be made available to operators in the form of a "display", however this solution is not prescribed in the measures and should not be listed exclusively.

Suggest that section 4.3.1 be rewritten to read:

- 4.3.1. **Process used for monitoring and comparing real time data associated with interconnection reliability operating limits in accordance with Measure 2.3 above. This may be accomplished through the use of an operator display and should demonstrate compliance with Measures 2.1 and 2.2.**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

It appears from the wording of this draft standard Section 203 Analysis and Assessments, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:

- 1.1. The reliability authority shall perform operational planning analyses to verify that the planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.

The wording of Item 1.2 should also be revised:

- 1.2. The reliability authority shall perform real-time assessments to verify that **the power system** it is not exceeding any interconnection reliability operating limits.

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

- 4.3. **The reliability authority shall demonstrate in accordance with Measure 2.1, the following upon the request of the compliance monitor:**
- 4.3.1. **Ability to perform an operational planning analysis**  
4.3.2. **Ability to perform a real time assessment**

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No

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18. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 204:

RA should only be penalized if the RA failed to direct action. If an operating entity fails to implement the directed action then the RA should not be penalized (if the RA does not have direct operational control.)

Section 5.4 should be amended to include "and RA failed to direct action."

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be re-written to read:

- 4.3. The reliability authority shall have the following available upon the request of its compliance monitor:
  - 4.3.1. Operations logs or other documentation **in accordance with Measure 2.1** and the actions or directives issued for each of these instances
  - 4.3.2. Interconnection Reliability Operating Limit Violation Reports **completed in accordance with Measure 2.2**

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes  No

20. Do you agree with the measures?

Yes  No

21. Do you agree with the compliance monitoring process?

Yes  No

22. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 205:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

- 4.3. The reliability authority shall have the following available upon the request of the compliance monitor:
  - 4.3.1. Data specification(s) **in accordance with Measure 2.1**

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4.3.2. Proof of distribution of the data specification(s) **in accordance with Measure 2.2**

**Requirement 206 - Data Provision**

23. Do you agree with the requirement?

Yes  No

24. Do you agree with the measures?

Yes  No

25. Do you agree with the compliance monitoring process?

Yes  No

26. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 206:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3.1 is too specific for the measure it supports. A possible solution might be:

4.3.1. **Documentation** indicating data was sent to the reliability authority **in accordance with Measure 2.1**

Non-compliance in data submission could take several forms and levels of impact to reliability.

Section 5 should be modified as follows:

5. Levels of Non-compliance:

5.1. Level one: **Data was provided, but not in the mutually agreed format**

5.2. Level two: **Data was provided, but not within the time-frame specified**

5.3. Level three: **Incomplete data was provided**

5.4. Level four: Data **was** not provided to the reliability authority as specified.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?

Yes  No

28. Do you agree with the measures?

Yes  No

29. Do you agree with the compliance monitoring process?

Yes  No

30. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 207:

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Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. The Levels of non-compliance should be objectively determined based on the evidence.

Measure 2.1 should be modified to include:

- 2.1. The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall **identify and** be coordinated with those entities responsible for acting and with those entities impacted by such actions.

Section 4.3 should be modified to include:

- 4.3. The reliability authority shall make the following available for inspection by the compliance monitor upon request:

- 4.3.1 Action plan **developed in accordance with Measure 2.1**

Section 5 should be modified to include:

5. Levels of Non-compliance
  - 5.1. Level one: Action plan exists but wasn't coordinated with all involved and impacted entities
  - 5.2. Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities
  - 5.3. Level three: **Action plan is incomplete**
  - 5.4. Level four: No action plan

### **Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Non-compliance could take several forms and levels of impact to reliability. The Levels of non-compliance should be objectively determined based on the evidence.

Section 4.3.1 should be modified to read:

- 4.3.1. Operations log or other data source(s) to show the following for each

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instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:

- 4.3.1.1. Date and time of each of directive received
- 4.3.1.2. Directive issued
- 4.3.1.3. Actions taken in response to directive **in accordance with Measure 2.1**

Section 5 should be modified as follows:

### 5. Levels of Non-compliance

5.1 Level one: **Operations log or other data source(s) do not show one of the following:**

- 5.1.1 **Date and time of each of directive received**
- 5.1.2 **Directive issued**
- 5.1.3 **Actions taken in response to directive**

5.2 Level two: **Operations log or other data source(s) do not show any of the following:**

- 5.1.4 **Date and time of each of directive received**
- 5.1.5 **Directive issued**
- 5.1.6 **Actions taken in response to directive**

5.3 Level three: Not applicable.

5.4 Level four: Did not follow directives.

### 35. List any Regional or Interconnection Differences for this standard:

None

### 36. Notifying the Compliance Monitor

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments:**

### 37. Any other comments on this standard?

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- Please note that throughout the standard the  $T_v$  term is used but is not formatted the same ( $T_v$  vs.  $T_v$ ). This is a minor, formatting issue, but should be consistent throughout to reduce confusion.





Mr. Timothy R. Gallagher  
Director-Standards  
North American Electric Reliability Council  
116-390 Village Boulevard  
Princeton, New Jersey 08540

Re: Comments by the Independent Electricity Market Operator (IMO) to Posted NERC Standards:

Dear Mr. Gallagher,

The Independent Electricity Market Operator (IMO) respectfully submits the following comments, to the following posted Standards.

1. **NERC Standard 200, “Monitor and Assess Short Term Transmission Reliability-Operate Within Limits”**
2. **NERC Standard 300, “Balance Resources and Demand”**
3. **NERC Standard 600, “Determine Facility Ratings, System Operating Limits and Transfer Capabilities”**

**General comments to all standards posted to date:**

The first concerns the repeated insertion of the monetary “Sanctions Table.” Sanctions in whatever form have no direct relevance to the reliability standard being developed. They belong in a stand-alone document, endorsed by NERC and the Regions, that specifically address the enforcement process of the standards. Furthermore monetary sanctions have not been broadly endorsed, and this continues to be an outstanding issue with all posted standards to date. It is the IMO's opinion that these references must be removed

The second deals with the need for supporting documentation, such as provided for the Balancing Resources and Demand standard, that clearly articulates the "principles" and/or "objective" that each drafting team used in developing each specific standard and measure. This would greatly aid, particularly during the standard development stages, in understanding the "intent" of the DRAFT standard, which tends to be written in generic terms.

Other comments to specific language in the Standards follow:

**1. NERC Standard 200, “Monitor and Assess Short Term Transmission Reliability-Operate Within Limits”**

Definitions:

$T_v$ : The violation time associated with a limit.

This definition seems to reflect the compliance violation time frame, but the usage of the  $T_v$  term in the draft standard is the "maximum acceptable response time" as determined by the RA/PA.

BPS (Bulk Power System) - Definition for BPS is required.

Sections 201 IROL Identification, requirements and measures read as follows:

**1. Requirements**

- 1.1. The reliability authority and planning authority shall identify and document which facilities (or groups of facilities) in the reliability authority's reliability area are subject to interconnection reliability operating limits.
- 1.2. The reliability authority and planning authority shall identify each interconnection reliability operating limit within the reliability authority's reliability area.
  - 1.2.1. The reliability authority or planning authority shall identify a maximum response time (Tv) for any interconnection reliability operating limit that does not already have a Tv.

**2. Measures**

- 2.1. The entity responsible shall establish a list of interconnection reliability operating limits for the reliability authority's reliability area.
  - 2.1.1. The entity responsible shall establish a maximum response time (Tv) for any interconnection reliability operating limit that does not already have a Tv.
- 2.2. The entity responsible shall establish a list of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits

IMO believes that the present definition of Tv, which is "self-defined, as so broad that the re-preparation time of thirty minutes has been lost. It is unclear if this was indeed the intent based on Section 203 requirements 1.1 and 1.2 and measure 2.1.2.

In Section 201 (1.2.1):

- the reliability authority or planning authority identifying Tv must establish and present the process through which Tv is derived, or the re-preparation time of thirty minutes should become the standard default absent such a process.
- the reliability authority or planning authority identifying Tv in one region/area must have a peer review and dispute resolution process with its' neighboring region(s)/area(s) to ensure a mutually acceptable Tv. Additionally, Section 1.1 suggests the need for a demonstrated process to "... identify and document which facilities (or groups of facilities) in the reliability authority's reliability area are subject to interconnection reliability operating limits." The mechanism to determine this critical element of the definition cannot be left open-ended. Without a recognized and accepted process, significant inconsistencies will result throughout the Interconnections.

A further concern with the draft is the continuing difficulty of defining wide area impact versus local impact. As the Standard defines "Cascading Outages":

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

There is no guidance on how the parameters are to be defined which would permit the identification of the local area and the widespread area. It also fails to recognize that a local area problem may evolve into a wider area problem depending on the load, time of day, recent contingencies and other factors. A well defined process for determining what is (and what is not) a reportable event is essential.

## Section 202 Monitoring read as follows

### 1. Requirements

- 1.1. The reliability authority shall monitor real-time system operating parameters to
- 1.2. Determine if it is operating its reliability area within its interconnection reliability operating limits.

### 2. Measures

- 2.1. The reliability authority shall have interconnection reliability operating limits available for its operations personnel's real-time use.
- 2.2. The reliability authority shall have real-time data available in a form that system operators can compare to the interconnection reliability operating limits.
- 2.3. The reliability authority shall monitor system operating parameters and compare these against its interconnection reliability operating limits.

The term "real-time" as used in the above lacks clarity in defining how well the RA monitors data ( ie how often - every 2 sec; 10 seconds, etc). As an example a RA may sample data instantly (real time), but only monitor once every 30 minutes. It is IMO's view, such sampling frequency satisfies the above measures, however, its adequacy for maintaining system reliability must be questioned.

## Section 203 Analysis and Assessment

### 1. Requirements

- 1.1. The reliability authority shall perform operational planning analyses to verify that its planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.
- 1.2. The reliability authority shall perform real-time assessments to verify that it is not exceeding any interconnection reliability operating limits.

### 2. Measures

- 2.1. The reliability authority shall identify operating situations or events that impact its ability to operate its reliability area without exceeding any identified interconnection reliability operating limits.
  - 2.1.1. The reliability authority shall conduct an operational planning analysis at least once each day, evaluating the next day's projected system operating conditions
  - 2.1.2. The reliability authority shall conduct a real-time assessment periodically, but at least once every 30 minutes.

The standard must provide a clear distinction between i) how often IROL's, are assessed, whether in real time or for operational planning analyses and ii) how quickly an IROL violation must be resolved. Requirement 1.2 "..... **to verify** that it is not exceeding any interconnection reliability operating limits" can be, in IMO's opinion, interrupted as to how quickly an IROL violation must be resolved...ie: each time it is detected in real-time, which shall be within 30 minutes or less in accordance with measure 2.1.2. This requirement belongs in section 201.

## Section 204 Actions

### 1. Requirements

- 1.3. The reliability authority shall act1 or direct others to act to:
  - 1.3.1. Prevent instances where interconnection reliability operating limits may be exceeded
  - 1.3.2. 1.1.2. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded

- 1.4. The reliability authority shall document instances of exceeding interconnection reliability operating limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding interconnection reliability operating limits for time 2 greater than or equal to Tv.

A further concern with the draft is the continuing difficulty of defining wide area impact versus local impact and the actions that are to be taken in such situations. As the Standard defines “Cascading Outages”:

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

In Section 201 there is no guidance on how the parameters are to be defined which would permit the identification of the local area and the widespread area. Further, fails to recognize that a local area problem or an "out of scope coverage" may evolve into a wider area problem depending on the load, time of day, recent contingencies and other factors. A well-defined process for determining what is (and what is not) a reportable event is essential. While, Section 204 fails to identify what actions are to be taken in such "out of scope coverage" situations.

## **2. NERC Standard 300, “Balance Resources and Demand”**

The IMO fully supports the comments put forth by NPCC - entitled “NPCC Comments On The NERC Balancing Standard,” which details numerous concerns with the methodology of the proposed new standard for frequency control.

## **3. NERC Standard 600, “Determine Facility Ratings, System Operating Limits and Transfer Capabilities”**

Refer to the attached STD Comment form for "**Determine Facility Ratings, System Operating Limits and Transfer Capabilities**"



*Ron Falsetti*

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☎ phone (905) 855-6187

**Comment Form – 1st Posting of the draft ‘Determine Facility Ratings, System Operating Limits, and Transfer Capabilities’ Standard**

*Note – This form is to be used to comment on version 1 of the Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard.*

*Comments will be accepted from July 1 – August 29, 2003.*

**Please review the draft standard and answer the questions in the yellow boxes. Send completed comment forms to [sarcomm@nerc.com](mailto:sarcomm@nerc.com)**

*If you have questions, please call Tim Gallagher at 609-452-8060 or send a question to [timg@nerc.com](mailto:timg@nerc.com)*

**SAR Commenter Information (For Individual Commenters)**

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Organization	IMO
Industry Segment #	2
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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities



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each of these pairs, the draft standard requires the development and availability of a “methodology” to determine the required quantities and secondly the application of this methodology in the establishment and communication of these values to the users of the values. These standards were developed assuming that the Facility Ratings, System Operating Limits and Transfer Capability values are to be provided to the user (e.g. those entities performing the reliability authority, planning authority, and transmission operator functions) on a schedule established by the *user*. The SDT endeavored to ensure that this draft standard would not require the determination of various values that had no identified user. For this reason, the user of the various values must request the specific values from the value provider (e.g. those entities performing the facility owner and planning authority functions) through the establishment of a schedule to supply the data.

### **Levels of Noncompliance:**

In the three ‘methodologies’ sections (601, 603, 605), the levels of noncompliance are based upon the availability and completeness of the documented procedures. In the three ‘communication’ sections (602, 603, 605), the levels of noncompliance are based on the availability of the values *requested by the users* of the information and the consistency of these values with the documented methodologies.

### **Sanctions:**

The SDT believes that failure to comply with the three ‘methodologies’ sections (601, 603, 605) does not warrant monetary sanctions, since the methodologies themselves would not *directly* impact the reliable operation of the transmission system.

The unavailability of Facility Rating *values*, System Operating Limit *values* and to a lesser extent, Transfer Capability *values* will have a real and detrimental impact on the real time reliability of the transmission system as well as the validity of transmission plans for future transmission system additions. Therefore, the three ‘communication’ sections (602, 604, 606) include monetary sanctions for repeated and/or significant noncompliance as per the sanction table. The SDT believes that nominal, fixed dollar sanctions are appropriate in these cases. The application of ‘per MW’ variable sanctions would be inappropriate for these infractions compared to the consequences of violating the requirements of the standard. While the SDT realizes that a minor omission of a requested value could result in sanction, the SDT also believes that graduated sanctions based upon the level of ‘completeness’ of the data received by the users are impractical. The SDT is of the opinion that not all values have equal importance to the reliability of the transmission system, and therefore, sanctions based upon ‘percentage of requested data received’ (perhaps omitting values of specific critical limitations) would be arbitrary.

### **Relationship with “Operate Within Limits” Standard:**

The SDT suggests that this draft standard be reviewed in concert with the “Operate Within Limits” draft standard. The Facility Ratings, System Operating Limits, and Transfer Capabilities draft standard requires the availability and usability of these data. The Operate Within Limits standard addresses the use of a subset of these values in real time operation. The SDT believes that the definitions developed in conjunction with this standard do not prohibit the stratification, or sub-classification, of the requested data (Facility Ratings, System Operating Limits, Transfer Capabilities) for specific uses or users. The intent and purpose of this standard, however, is to identify *all* system operating limits and not to differentiate them based upon the impacts of violating them.

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**1. This standard assumes that the reliability authority has the ultimate responsibility to establish system operating limits and relies upon the transmission operator for input. Have the roles and responsibilities of transmission operators versus reliability authorities in determining system operating limits been properly characterized in this standard?**

Yes

No

Comments

**2. Do you agree that identifying and communicating all system operating limits is within the scope of this standard and is necessary for reliability?**

Yes

No

Comments

**3. NERC Regions have the right to ask for Regional differences for inclusion in NERC standards. Such differences would apply only to the listed Region and would become an enforceable part of the NERC standard only if approved by the industry. NPCC has requested a Regional difference in section 603. Do you think NPCC’s Regional difference should be included in this standard?**

Yes

No

Comments The NPCC criteria is more stringent than the NERC standard.

**4. Are you aware of any other Regional differences that should be included in this standard?**

Yes

No

Comments Possibly ERCOT and WSCC will have differences.



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**5. Do you agree with the sanction philosophy in this standard? (No financial penalties for methodology violations, nominal fixed monetary penalties for failure to communicate values).**

Yes

No

Comments Financial penalties should not be applied. This would open the gate to financial penalties for the many, much more severe violations addressed in other standards. The IMO feels that non-monetary sanctions are sufficient.

**6. Do you agree with the proposed requirements and measurements in section 601?**

Yes

No

Comments

**7. Do you agree with the proposed compliance monitoring process in section 601?**

Yes

No

Comments

**8. Do you agree with the proposed levels of non-compliance in section 601?**

Yes

No

Comments See general comment below

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**9. Do you agree with the proposed requirements and measurements in section 602?**

Yes

No

Comments

**10. Do you agree with the proposed compliance monitoring process in section 602?**

Yes

No

Comments

**11. Do you agree with the proposed levels of non-compliance in section 602?**

Yes

No

Comments The levels do not seem to follow any progression which would suggest increasing severity. Why is failure to have all ratings for existing facilities any different than not having all ratings for new facilities: level 1 as opposed to level 2? Either you have ratings or not.

**12. Do you agree with the proposed requirements and measurements in section 603?**

Yes

No

Comments

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**13. Do you agree with the proposed compliance monitoring process in section 603?**

Yes

No

Comments

**14. Do you agree with the proposed levels of non-compliance in section 603?**

Yes

No

Comments See general comment below

**15. Do you agree with the proposed requirements and measurements in section 604?**

Yes

No

Comments

**16. Do you agree with the proposed compliance monitoring process in section 604?**

Yes

No

Comments

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**17. Do you agree with the proposed levels of non-compliance in section 604?**

Yes

No

Comments See general comment below

**18. Do you agree with the proposed requirements and measurements in section 605?**

Yes

No

Comments

**19. Do you agree with the proposed compliance monitoring process in section 605?**

Yes

No

Comments

**20. Do you agree with the proposed levels of non-compliance in section 605?**

Yes

No

Comments The level 2 and 3 violations seem more severe than the violation addressed in level 4.

**21. Do you agree with the proposed requirements and measurements in section 606?**

Yes

No

Comments

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**22. Do you agree with the proposed compliance monitoring process in section 606?**

Yes

No

Comments

**23. Do you agree with the proposed levels of non-compliance in section 606?**

Yes

No

Comments See general comment below

**24. What additional clarification, details, or modifications to this standard are necessary before it can be brought to ballot?**

Comments All the sanctions text should be removed, as they are dealt with elsewhere.

**25. Please enter any other comments you have regarding this standard in the space below.**

Comments

The proposed non-compliance levels for all these standards do not follow a natural progression. They seem to be somewhat contrived and slotted into the 4 levels.

601.4.2.2 - 10 years seems rather infrequent. Should provide opportunity for some verification when ratings change.

601.4.3, 602.4.4, 604.4.4, 606.4.4 - 3 years may not be long enough, given the typical timelines required to resolve differences.

603 Table I Note a) – reference is made to NERC Planning Standards – Will these still exist after the new family of standards are in place.

603 Table IA

– The NERC standard permits this table to be included here, but is it really necessary to have it here, other than for information purposes. At the NERC level, would it be sufficient to just note

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that NPCC has more stringent criteria and refer the reader to the NPCC standards.

- In the 2<sup>nd</sup> row, for “Cascading outages”, superscript “f” should be “c”. Under category C, for “Double Circuit Tower” (item #3) superscript “e” should be “f”
- Note “e” text requires reformatting to remove blank line.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

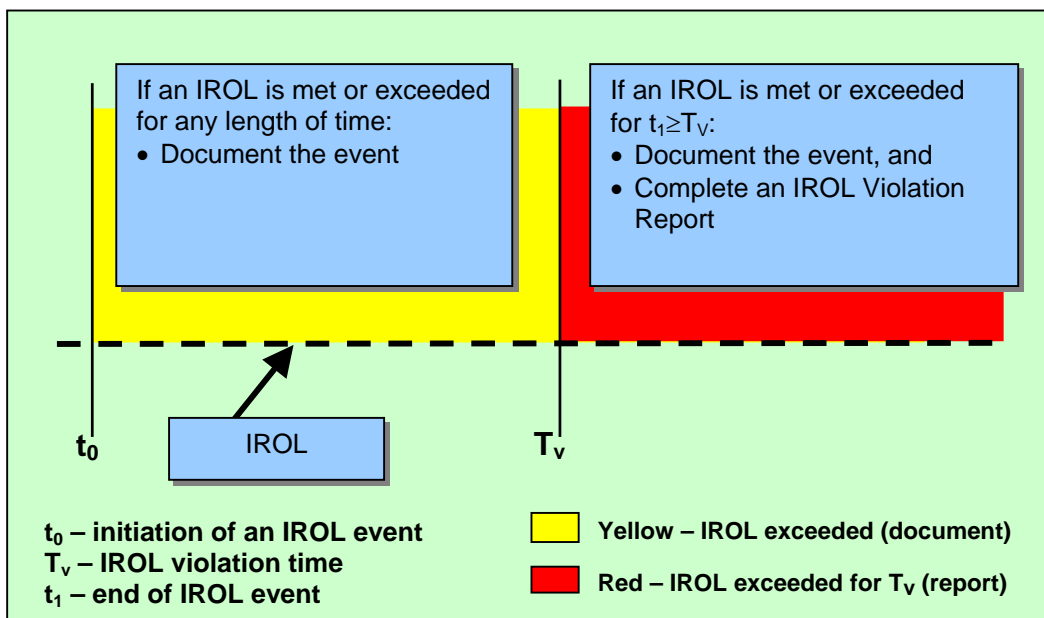
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

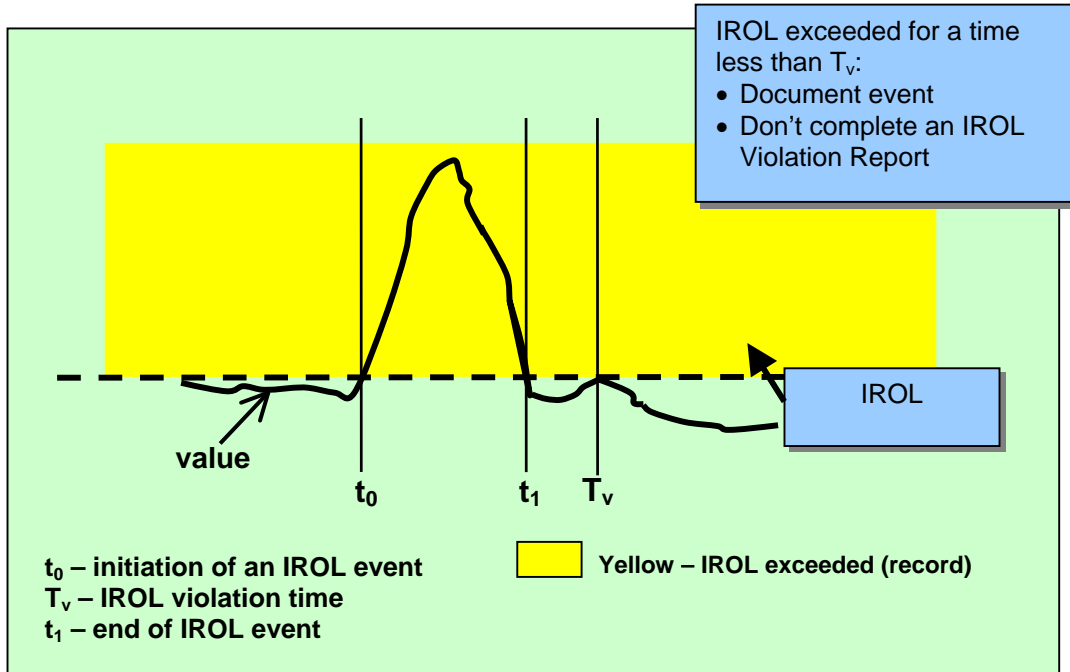
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

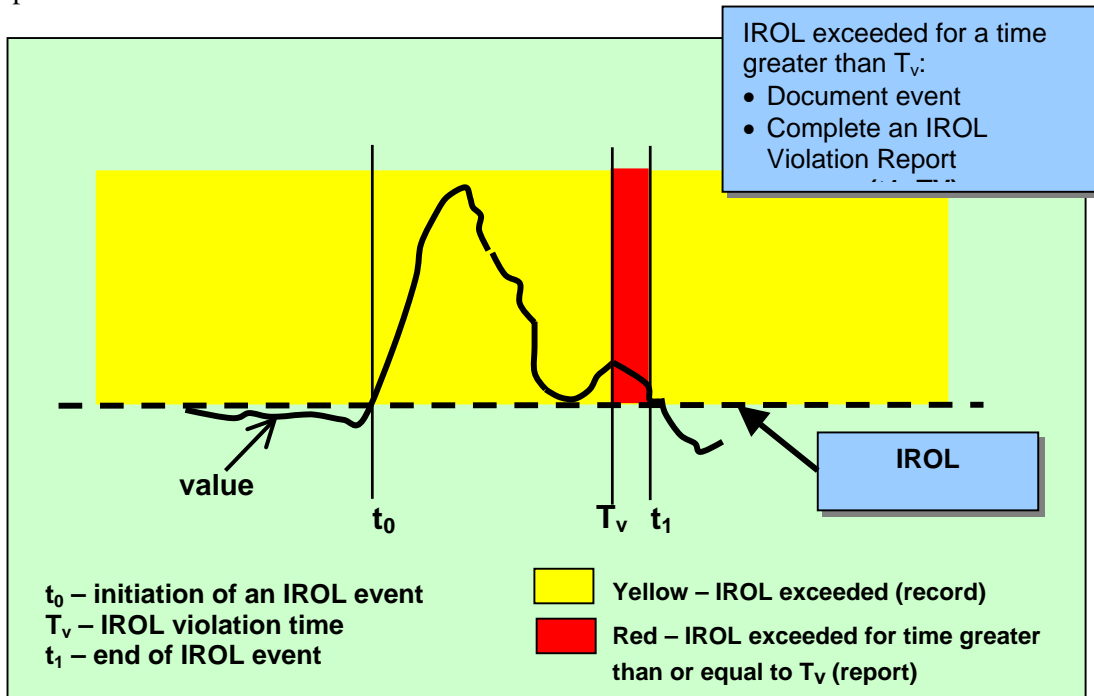


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.





## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205:

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
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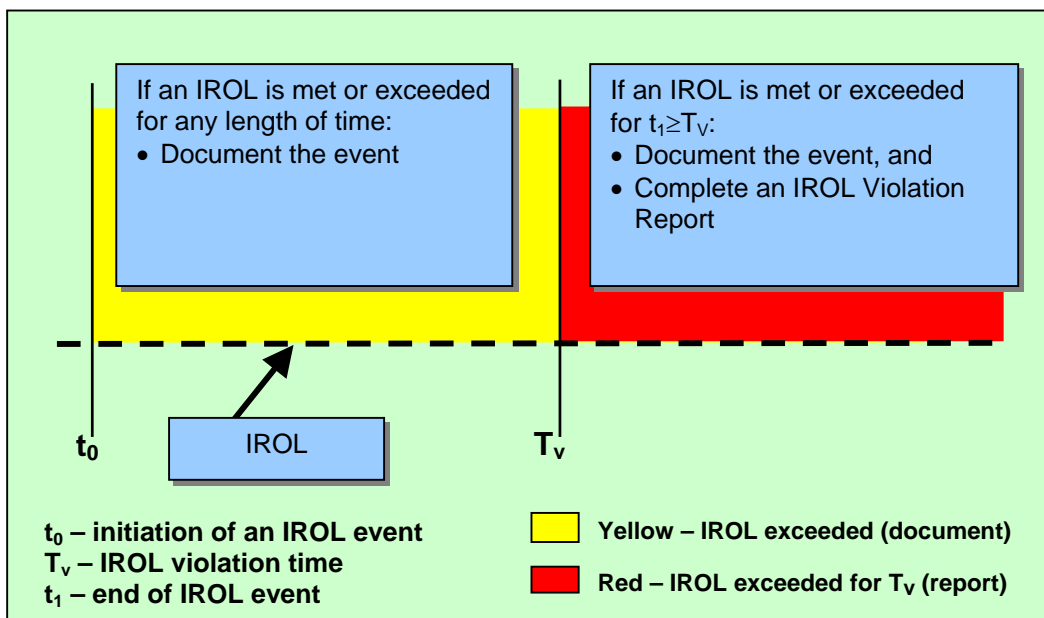
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

**Major Changes to this Standard:**

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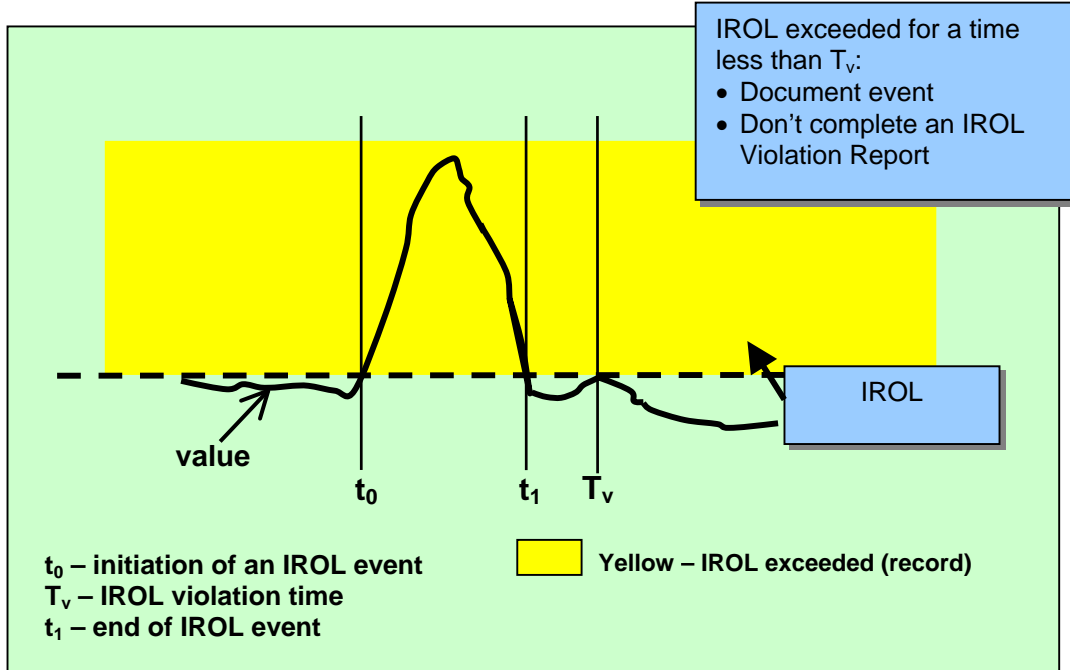
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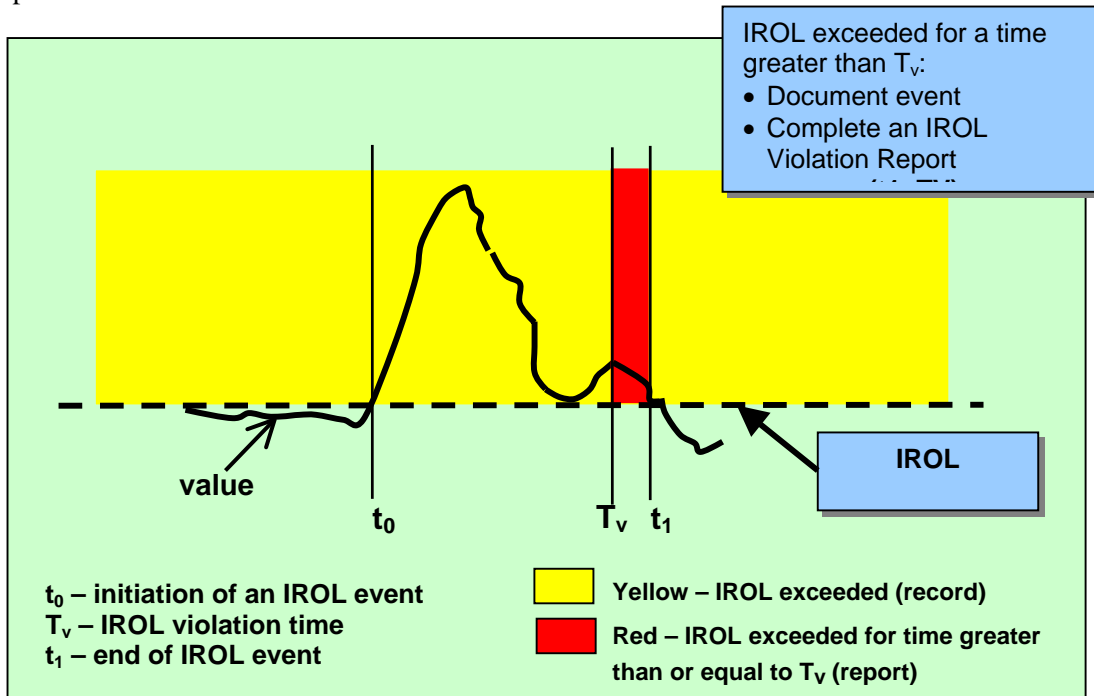


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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For these reasons, this second version of the standard does not contain the following requirements for the TOP:

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## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b>STD Commenter Information (For Individual Commenters)</b>	<b>Key to Industry Segment #'s:</b>
<b>Name</b>	1 – Trans. Owners
<b>Organization</b>	2 – RTO's, ISO's, RRC's
<b>Industry Segment #</b>	3 – LSE's
<b>Telephone</b>	4 – TDU's
<b>E-mail</b>	5 - Generators
	6 - Brokers, Aggregators, and Marketers
	7 - Large Electricity End Users
	8 - Small Electricity Users
	9 - Federal, State, and Provincial Regulatory or other Govt. Entities

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group: NPCC CP9</b>	<b>Group Chair: Guy V. Zito</b>	
	<b>Chair Phone: 212-840-1070</b>	
	<b>Chair Email: gzito@npcc.org</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<b>Michael Schiavone</b>	<b>National Grid USA</b>	<b>1</b>
<b>Roger Champagne</b>	<b>Hydro-Quebec TransEnergie</b>	<b>1</b>
<b>Ralph Rufrano</b>	<b>New York Power Authority</b>	<b>1</b>
<b>David Little</b>	<b>Nova Scotia Power Inc.</b> Representing the Maritimes Area of Canada	<b>1</b>
<b>David Kiguel</b>	<b>Hydro One Networks (Ontario)</b>	<b>1</b>
<b>Michael Potishnak</b>	<b>ISO-New England</b>	<b>2</b>
<b>Barry Gee</b>	<b>National Grid USA</b>	<b>1</b>
<b>Dan Stosick</b>	<b>ISO-New England</b>	<b>2</b>
<b>Fernando Saavedra</b>	<b>ISO-New England</b>	<b>2</b>
<b>Greg Campoli</b>	<b>New York ISO</b>	<b>2</b>

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### Background

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

NPCC feels that with respect to  $T_v$  there must be an established process through which this is derived or the re-preparation time of thirty minutes should become the standard default absent such a process.

Regarding Cascading Outages; There is no guidance on how the parameters are to be defined which would permit the identification of the local area and the widespread area. It also fails to recognize that a local area problem may evolve into a wider area problem depending on the load, time of day, recent contingencies and other factors. A well-defined process for determining what is (and what is not) a reportable event is essential.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

IROL will not always be known ahead of time. An unusual combination of events could create an IROL type event that was unplanned for. Some of the IROL may be time variant so the Compliance Monitoring Process section needs to address this.

Regarding levels of compliance it is suggested that less severe levels of non-compliance be associated with incompleteness or inaccuracy of the list. NPCC suggests that compliance with only IROLs for planned system conditions be the requirement.

### Requirement 202 - Monitoring

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?



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Yes                       No

9. Do you agree with the compliance monitoring process?

Yes                       No

10. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 202:

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

NPCC requests the drafting team to provide their thoughts and incorporate allowances in the compliance area for EMS "down time" for maintenance or to switch over to backup system should problems arise.

Although we agree with the measures stated, we would suggest that more frequent in-day analyses based on changed system conditions to predict system performance in the coming hours be required.

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

NPCC also suggests adding "footnote 1" that appears on page 10 to the Level one non-compliance measure to capture the thought that no overt action is sometimes an acceptable action.

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?

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Yes

No

22. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 205:

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

Regarding the level of non-compliance for not providing data to the reliability authority, NPCC feels that there should be some differentiation between not submitting any data and submitting partial data or new/additional data and perhaps there needs to be some more granularity in the description of what constitutes non-compliance.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

NPCC suggests that there be timeframe requirement added instead of "upon request" to providing the Action plan and suggests 20 business days.

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

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Comments about Requirement 208:

Although we agree with the level four instance of non-compliance it would be beneficial for the compliance monitor to require data and other information surrounding the inaction.

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

NPCC is adamantly opposed to monetary sanctions and feels letters of increasing severity are a more effective compliance tool for ensuring adherence to standards.

NPCC also feels there is a lack of coordination between the standard drafting teams and has noted instances where one team felt an issue was addressed in a separate standard to later learn it was not. As an example, with respect to the Balancing Resources standard, transmission overloads that are caused by poor control are not covered by this standard unless they reach a high level IROL. It later was identified that where this was thought to have been covered, the Operate Within Limits Standard, it was not. We would suggest that there be technical oversight as we go forward with these processes to ensure there are no “gaps” or critical reliability issues that are not addressed in the resultant standards.

Establishment of the IROL should be done in the Facility Rating Standard because that is the standard that establishes Operating Limits otherwise the wording of the title should be changed to Establish IROL and Operate within Limits.

From a global perspective it might be a prudent action to place the NERC RS development in a moratorium until the investigation into the blackout cause is completed and determinations have been made. There could be new Reliability issues that need to be captured in the developing RS that need to be incorporated into the upcoming draft RS.

NPCC seeks explanation for drawing the line at addressing only instability, cascading outages and separation. For example, what standard, if any, will address the scenario where an entity operates their system to cause a sizable thermal overload on a

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transmission line in another entity's system. (e.g. a transmission line burns down if the affected entity does not take corrective action)

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Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
 The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
 E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

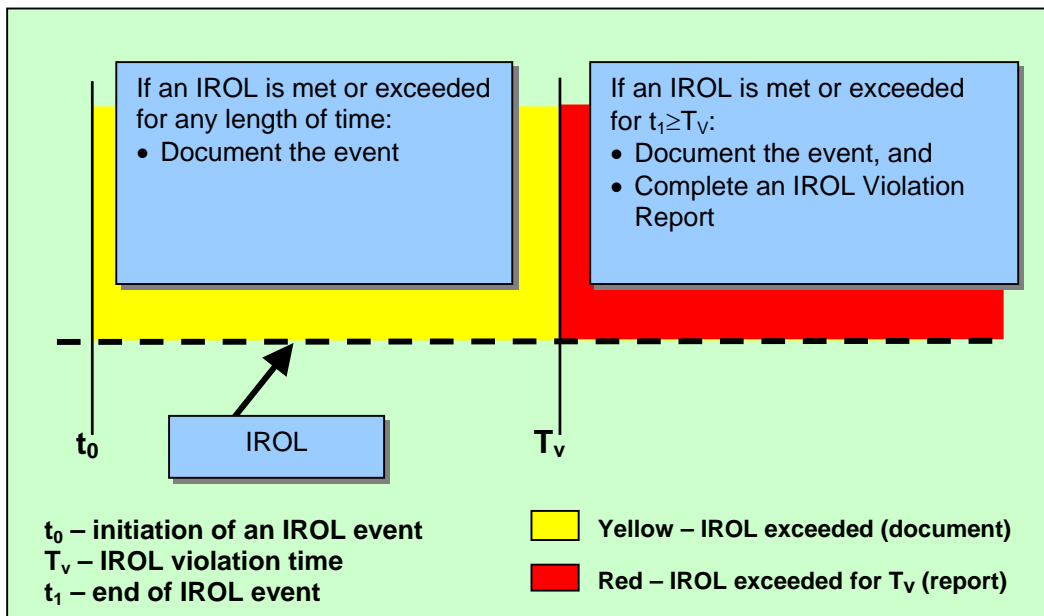
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

**Major Changes to this Standard:**

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

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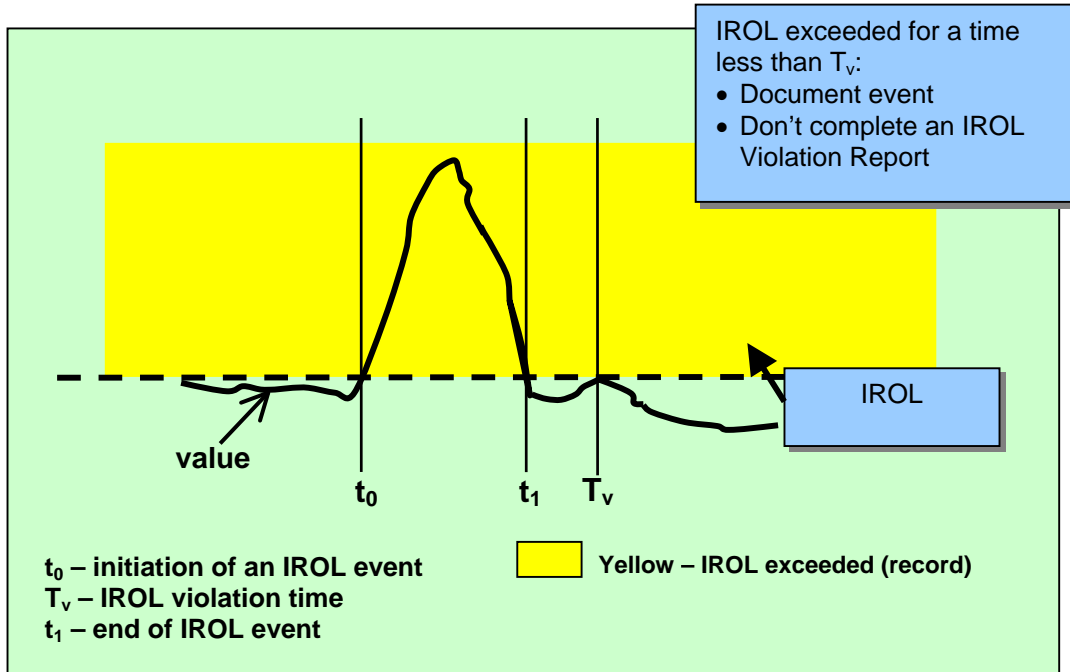
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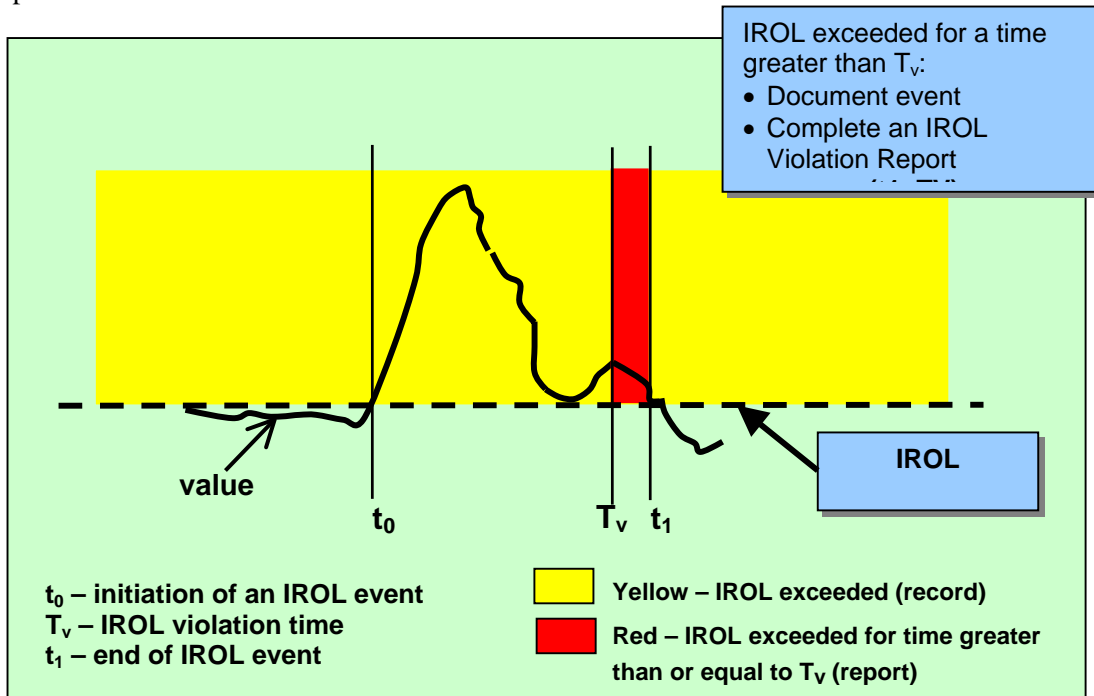


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In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
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**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

The “Transmission Operator” definition appears to be a definition for transmission provider. The functional model defines Transmission Operator as: “Operates and maintains the transmission facilities, and executes switching orders”.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No  
Comments

There should be some responsibilities for both RA (present day Reliability Coordinator) and the Transmission Operator. They aren’t necessarily the same requirements.

The TO-RA relationship is akin to the pilot-air traffic controller relationship. Both monitor some common items. In genera, one view is local, the other is broader and at a higher level. Both have a responsibility for air safety.

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201:

Who is “the entity responsible”?

It would be preferable to have limits populated in a common database available to all reliability entities so that there’s no miscommunication of limits between PA, TO and RA or misunderstandings of one RA’s impact on another. Also, the RA wouldn’t be hit with a level 4 compliance violation for failing to produce a piece of paper during a site visit.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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The Planning Authority is to provide limits used by the RA. The posted functional model has no details on the planning authority. Perhaps the standard should say, the planning authority and/or Transmission Operator

**Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
  
- 8. Do you agree with the measures?  
 Yes                       No
  
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No
  
- 10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

TOs should also be monitoring this.

What if other authorities refuse to provide data or provide corrupt data to the RA? It appears the RA is accountable, which doesn't seem appropriate.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

There can be up to 365 of both “real time assessment” and “planning analysis” violations in a year. Although it’s not likely many will occur, probably every RA will have occurrences of data transmission problems or EMS outages of 30 minutes in a year. Keep in mind the RA relies on data provided by others.

Since this is self-reported, it’s akin to a person sending an annual letter to their state patrol telling them how many times they were speeding during the year so that they can receive back the proper number of tickets in the mail.

To accrue a level 4 violation for each data hiccup or EMS outage doesn’t seem appropriate.

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

In this section, the RA gets a level 4 compliance violation if a limit is exceeded, the RA takes action and the limit is exceeded for  $T_v$ . It appears the RA is accountable if they take timely action (direct corrective measures) and the other authorities (IA, BA, TO) fail to respond.

Also, it appears that the same penalty is assessed whether the RA failed to act for one event or 100 events for the year.



**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes

No

20. Do you agree with the measures?

Yes

No

21. Do you agree with the compliance monitoring process?

Yes

No

22. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 205:

Why does the RA have to notify the Compliance Monitor within 5 days if an entity doesn't provide data to the RA if "data provision" is monitored via annual self-certification?

The standard requires the RA to be responsible for collecting data from all participants in a "mutually agreeable" format. This seems to be saying that each generator owner, BA, TP can ask for a different format. If the RA doesn't agree to this, the RA becomes non-compliant because it is failing to collect data.

The RA should have the authority to require consistent data formats from each participant group (the participant group as a whole should have a say in the data format, not each individual participant).

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

This section appears to have an “all or nothing” format. The RA needs a great deal of information to fulfill its obligations. The “level 4” violation should only be for failure to provide data on IROL elements. There should perhaps be some scaled compliance level for failure to provide other data, such as:

Level 1: failure to provide 10% of the RA’s required data or data transmission failures greater than X% of the year.

Level 2: failure to provide 10% of the RA’s required data or data transmission failures greater than X% of the year.

Level 3: failure to provide 10% of the RA’s required data or data transmission failures greater than X% of the year.

Level 4: Failure to provide data for any IORL or pre-contingent element.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

How do you demonstrate coordination of an action plan?

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?

Yes

No

32. Do you agree with the measures?

Yes

No

33. Do you agree with the compliance monitoring process?

Yes

No

34. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 208:

The “measures” section only say that the various authorities only have to document the directive and the actions they took (not that they actually followed the directive).

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments** There does not appear to be a need to make submissions within 5 business days. It may take a while to sort out a problem.

**37. Any other comments on this standard?**

In general, the level of compliance violation should be proportional to its impact on reliability (not the size of the entity).

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

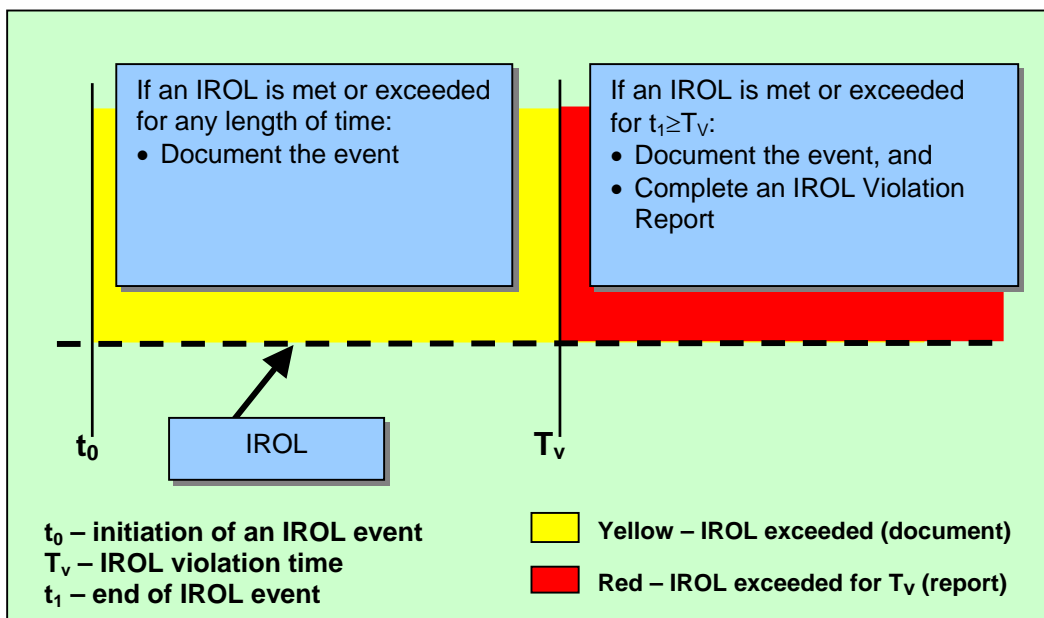
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

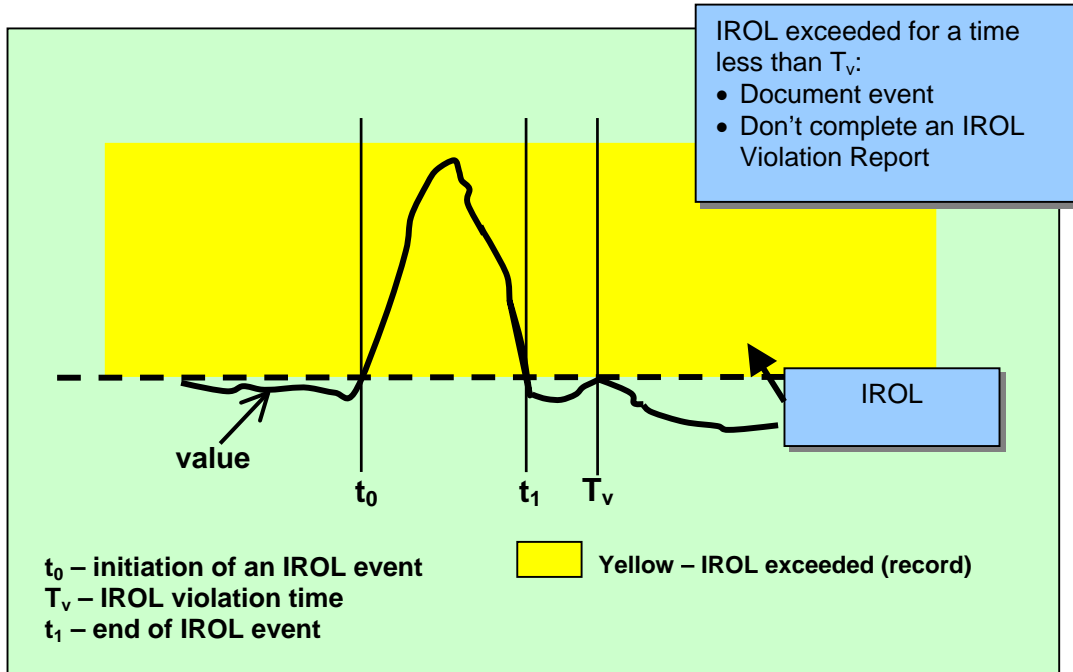
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

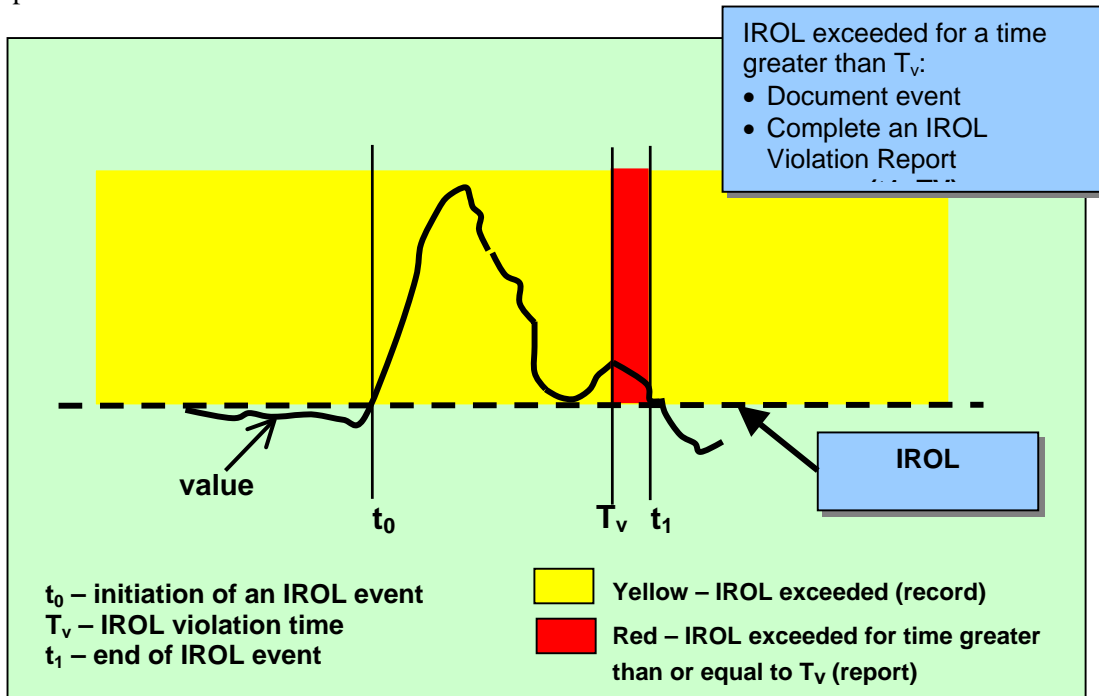


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

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**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

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**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
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- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

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The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Ken Githens</b>
<b>Organization</b>	<b>Allegheny Energy Supply</b>
<b>Industry Segment #</b>	<b>5</b>
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<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
---

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments AE agrees that two organizations controlling the same limit is not productive.

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?

Yes                       No

8. Do you agree with the measures?

Yes                       No

9. Do you agree with the compliance monitoring process?

Yes                       No

10. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 202:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?  
 Yes                       No
20. Do you agree with the measures?  
 Yes                       No
21. Do you agree with the compliance monitoring process?  
 Yes                       No
22. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 205: However, refer to comment under question 37.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206: However, refer to comment under question 37.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 208:

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

**RA data collection and communication is required under Std. 200 and 600 with financial sanction for noncompliance under both. An organization should not be hit with financial sanctions under both standards for not communicating the data. Only one standard should apply.**

August 29, 2003

Comments

200- Operate within Interconnection Reliability Operating Limits

CS Review Team Comments:

- The definitions are well thought out.
- The document has been written in a manner that meets many of the concerns we had with the first draft.
- The key compliance issues that should be measures are captured in 202, 203 and 204. (The other measures, identifying the elements, data collection, data provision, action plan, and RA Directives are important as supporting requirements but do not require a compliance structure. Suggest that the certification process should spell out the policies, procedures and processes, reporting relationships and data collection requirements.)
- There are some concerns with the Compliance levels, and the CS and CRS will discuss that in Charleston, September 8 and 9.
- The added comments below deal mostly with the Compliance Monitoring Process.

201

1. Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.
2. 4.2 Subsequent to the initial compliance review, the entity responsible shall demonstrate compliance through self-certification submitted to its compliance monitor annually.
3. 4.3 Compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, or review of information submitted as requested, at the discretion of the compliance monitor.
4. Change 4.2 and 4.3 to 4.4 and 4.5

202

1. Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.
2. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation of complaint) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor.
5. Re-number 4.2 and 4.3 to 4.3 and 4.4

203

1. Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or

- the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.
2. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation of complaint) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor.
  3. Re-number 4.2 and 4.3 to 4.3 and 4.4

204

1. Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.
2. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor.
3. Re-number 4.2 and 4.3 to 4.3 and 4.4

205

1. Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.
2. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor.
3. Re-number 4.2 and 4.3 to 4.3 and 4.4

206 OK

207

1. Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.
2. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor.
3. Re-number 4.2 and 4.3 to 4.3 and 4.4

208 OK



**Comment Form – 1st Posting of the draft ‘Determine Facility Ratings, System Operating Limits, and Transfer Capabilities’ Standard**

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*Note – This form is to be used to comment on version 1 of the Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard.*

*Comments will be accepted from July 1 – August 29, 2003.*

**Please review the draft standard and answer the questions in the yellow boxes. Send completed comment forms to [sarcomm@nerc.com](mailto:sarcomm@nerc.com)**

*If you have questions, please call Tim Gallagher at 609-452-8060 or send a question to [timg@nerc.com](mailto:timg@nerc.com)*

**SAR Commenter Information (For Individual Commenters)**

Name	Gary Won for:
Organization	IMO
Industry Segment #	2
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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial Regulatory or other Govt. Entities

**Comment Form – 1st Posting of the draft ‘Determine Facility Ratings, System Operating Limits, and Transfer Capabilities’ Standard**

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<b>SAR Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Representative:</b>
		<b>Representative Phone:</b>
		<b>Representative Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

Background Information:

**Notes to Industry Commenters:**

The standard drafting team (SDT) considered the SAR for this proposed standard as well as the SAR comments previously supplied by the industry community while developing the standard. The SDT believes that it is helpful for the industry to understand the perspective of the SDT while reviewing this draft standard. The SDT also believes that it would be helpful to explain the linkages with other standards currently under development. The explanations below are offered to provide context and facilitate industry comments.

**General Philosophy:**

The SDT addressed the three components of this draft standard in three sets of pairs: Facility Ratings (601, 602), System Operating Limits (603, 604), and Transfer Capabilities (605,606). In

## Comment Form – 1st Posting of the draft ‘Determine Facility Ratings, System Operating Limits, and Transfer Capabilities’ Standard

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each of these pairs, the draft standard requires the development and availability of a “methodology” to determine the required quantities and secondly the application of this methodology in the establishment and communication of these values to the users of the values. These standards were developed assuming that the Facility Ratings, System Operating Limits and Transfer Capability values are to be provided to the user (e.g. those entities performing the reliability authority, planning authority, and transmission operator functions) on a schedule established by the *user*. The SDT endeavored to ensure that this draft standard would not require the determination of various values that had no identified user. For this reason, the user of the various values must request the specific values from the value provider (e.g. those entities performing the facility owner and planning authority functions) through the establishment of a schedule to supply the data.

### **Levels of Noncompliance:**

In the three ‘methodologies’ sections (601, 603, 605), the levels of noncompliance are based upon the availability and completeness of the documented procedures. In the three ‘communication’ sections (602, 603, 605), the levels of noncompliance are based on the availability of the values requested by the users of the information and the consistency of these values with the documented methodologies.

### **Sanctions:**

The SDT believes that failure to comply with the three ‘methodologies’ sections (601, 603, 605) does not warrant monetary sanctions, since the methodologies themselves would not directly impact the reliable operation of the transmission system.

The unavailability of Facility Rating *values*, System Operating Limit *values* and to a lesser extent, Transfer Capability *values* will have a real and detrimental impact on the real time reliability of the transmission system as well as the validity of transmission plans for future transmission system additions. Therefore, the three ‘communication’ sections (602, 604, 606) include monetary sanctions for repeated and/or significant noncompliance as per the sanction table. The SDT believes that nominal, fixed dollar sanctions are appropriate in these cases. The application of ‘per MW’ variable sanctions would be inappropriate for these infractions compared to the consequences of violating the requirements of the standard. While the SDT realizes that a minor omission of a requested value could result in sanction, the SDT also believes that graduated sanctions based upon the level of ‘completeness’ of the data received by the users are impractical. The SDT is of the opinion that not all values have equal importance to the reliability of the transmission system, and therefore, sanctions based upon ‘percentage of requested data received’ (perhaps omitting values of specific critical limitations) would be arbitrary.

### **Relationship with “Operate Within Limits” Standard:**

The SDT suggests that this draft standard be reviewed in concert with the “Operate Within Limits” draft standard. The Facility Ratings, System Operating Limits, and Transfer Capabilities draft standard requires the availability and usability of these data. The Operate Within Limits standard addresses the use of a subset of these values in real time operation. The SDT believes that the definitions developed in conjunction with this standard do not prohibit the stratification, or sub-classification, of the requested data (Facility Ratings, System Operating Limits, Transfer Capabilities) for specific uses or users. The intent and purpose of this standard, however, is to identify *all* system operating limits and not to differentiate them based upon the impacts of violating them.

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**1. This standard assumes that the reliability authority has the ultimate responsibility to establish system operating limits and relies upon the transmission operator for input. Have the roles and responsibilities of transmission operators versus reliability authorities in determining system operating limits been properly characterized in this standard?**

Yes

No

Comments

**2. Do you agree that identifying and communicating all system operating limits is within the scope of this standard and is necessary for reliability?**

Yes

No

Comments

**3. NERC Regions have the right to ask for Regional differences for inclusion in NERC standards. Such differences would apply only to the listed Region and would become an enforceable part of the NERC standard only if approved by the industry. NPCC has requested a Regional difference in section 603. Do you think NPCC’s Regional difference should be included in this standard?**

Yes

No

Comments The NPCC criteria is more stringent than the NERC standard.

**4. Are you aware of any other Regional differences that should be included in this standard?**

Yes

No

Comments Possibly ERCOT and WSCC will have differences.

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**5. Do you agree with the sanction philosophy in this standard? (No financial penalties for methodology violations, nominal fixed monetary penalties for failure to communicate values).**

Yes

No

Comments Financial penalties should not be applied. This would open the gate to financial penalties for the many, much more severe violations addressed in other standards. The IMO feels that non-monetary sanctions are sufficient.

**6. Do you agree with the proposed requirements and measurements in section 601?**

Yes

No

Comments

**7. Do you agree with the proposed compliance monitoring process in section 601?**

Yes

No

Comments

**8. Do you agree with the proposed levels of non-compliance in section 601?**

Yes

No

Comments See general comment below

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**9. Do you agree with the proposed requirements and measurements in section 602?**

Yes

No

Comments

**10. Do you agree with the proposed compliance monitoring process in section 602?**

Yes

No

Comments

**11. Do you agree with the proposed levels of non-compliance in section 602?**

Yes

No

Comments The levels do not seem to follow any progression which would suggest increasing severity. Why is failure to have all ratings for existing facilities any different than not having all ratings for new facilities: level 1 as opposed to level 2? Either you have ratings or not.

**12. Do you agree with the proposed requirements and measurements in section 603?**

Yes

No

Comments

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**13. Do you agree with the proposed compliance monitoring process in section 603?**

Yes

No

Comments

**14. Do you agree with the proposed levels of non-compliance in section 603?**

Yes

No

Comments See general comment below

**15. Do you agree with the proposed requirements and measurements in section 604?**

Yes

No

Comments

**16. Do you agree with the proposed compliance monitoring process in section 604?**

Yes

No

Comments

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**17. Do you agree with the proposed levels of non-compliance in section 604?**

Yes

No

Comments See general comment below

**18. Do you agree with the proposed requirements and measurements in section 605?**

Yes

No

Comments

**19. Do you agree with the proposed compliance monitoring process in section 605?**

Yes

No

Comments

**20. Do you agree with the proposed levels of non-compliance in section 605?**

Yes

No

Comments The level 2 and 3 violations seem more severe than the violation addressed in level 4.



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**21. Do you agree with the proposed requirements and measurements in section 606?**

Yes

No

Comments

**22. Do you agree with the proposed compliance monitoring process in section 606?**

Yes

No

Comments

**23. Do you agree with the proposed levels of non-compliance in section 606?**

Yes

No

Comments See general comment below

**24. What additional clarification, details, or modifications to this standard are necessary before it can be brought to ballot?**

Comments All the sanctions text should be removed, as they are dealt with elsewhere.

**Comment Form – 1st Posting of the draft ‘Determine Facility Ratings, System Operating Limits, and Transfer Capabilities’ Standard**

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**25. Please enter any other comments you have regarding this standard in the space below.**

Comments

The proposed non-compliance levels for all these standards do not follow a natural progression. They seem to be somewhat contrived and slotted into the 4 levels.

601.4.2.2 - 10 years seems rather infrequent. Should provide opportunity for some verification when ratings change.

601.4.3, 602.4.4, 604.4.4, 606.4.4 - 3 years may not be long enough, given the typical timelines required to resolve differences.

603 Table I Note a) – reference is made to NERC Planning Standards – Will these still exist after the new family of standards are in place.

603 Table IA

- The NERC standard permits this table to be included here, but is it really necessary to have it here, other than for information purposes. At the NERC level, would it be sufficient to just note that NPCC has more stringent criteria and refer the reader to the NPCC standards.
- In the 2<sup>nd</sup> row, for “Cascading outages”, superscript “f” should be “c”. Under category C, for “Double Circuit Tower” (item #3) superscript “e” should be “f”
- Note “e” text requires reformatting to remove blank line.

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

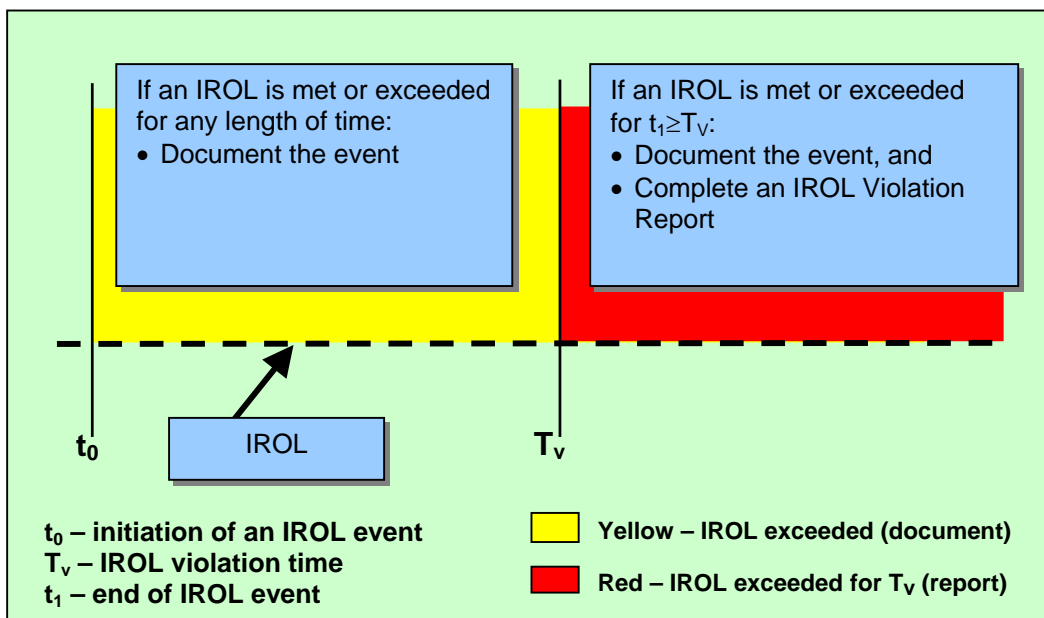
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

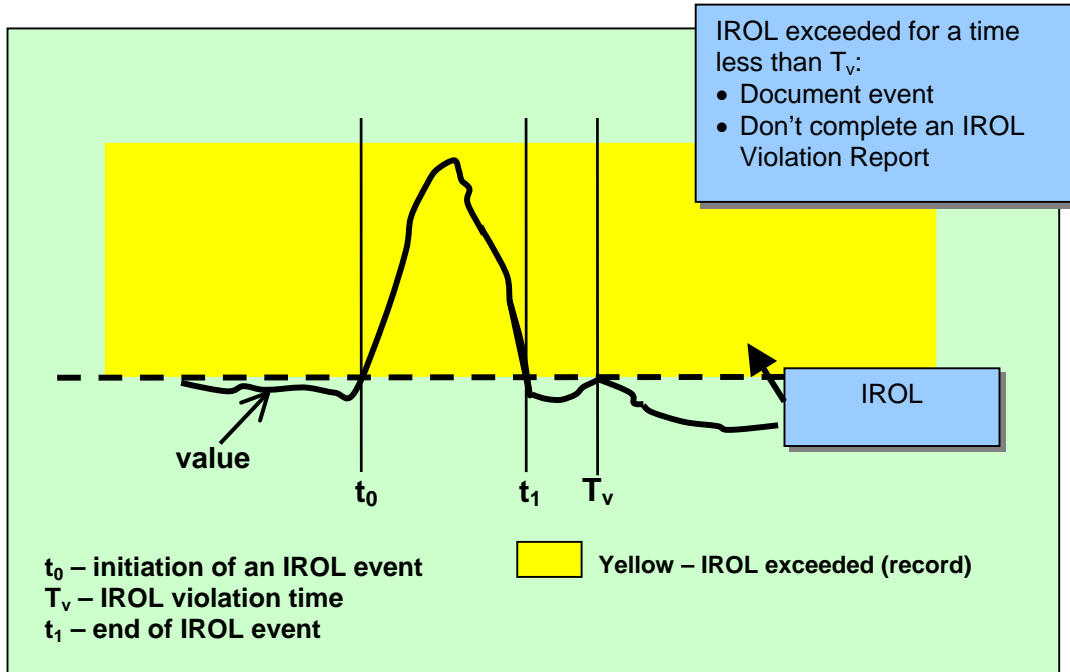
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

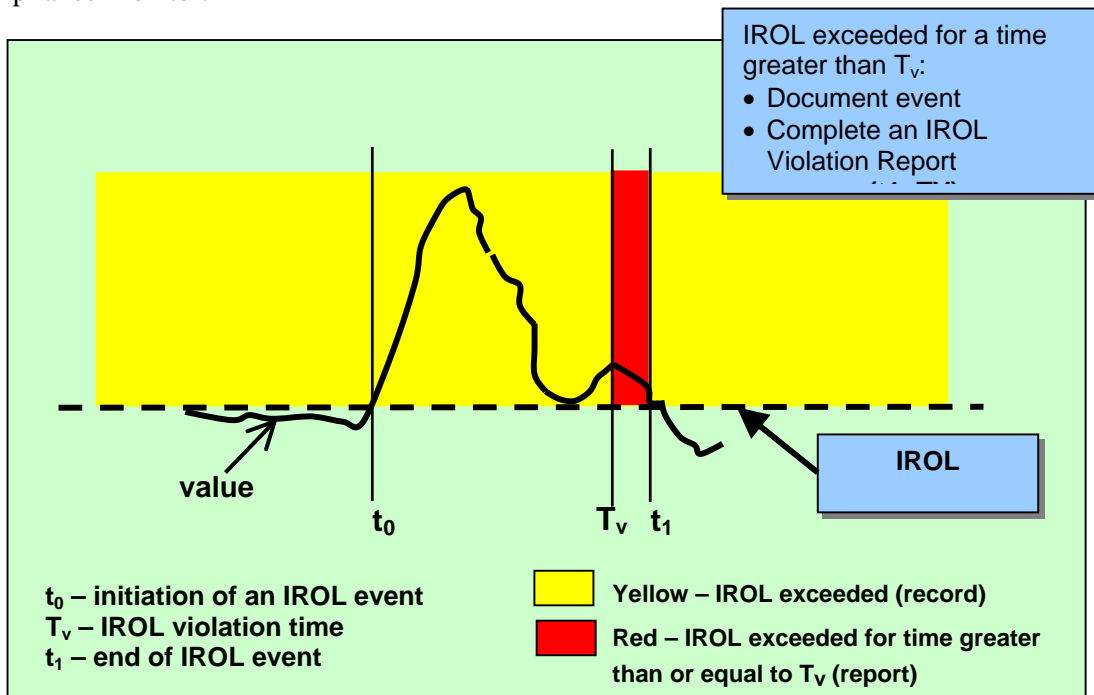


**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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STD Commenter Information (For Individual Commenters)	
<b>Name</b>	<b>Kathleen Goodman</b>
<b>Organization</b>	<b>ISO New England Inc.</b>
<b>Industry Segment #</b>	<b>2</b>
<b>Telephone</b>	<b>(413) 535-4111</b>
<b>E-mail</b>	<b>kgoodman@iso-ne.com</b>

Key to Industry Segment #'s:
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

STD Commenter Information (For Groups Submitting Group Comments)		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
List of Group Participants that Support These Comments:		
Name	Company	Industry Segment #



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Background

1. Do you agree with the definitions provided in the front of this standard?

Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision.

ISO-NE believes that, with respect to  $T_v$ , there must be an established process through which this is derived or the re-preparation time of thirty minutes should become the standard default absent such a process.

Regarding Cascading Outages, There is no guidance on how the parameters are to be defined which would permit the identification of the local area and the widespread area. It also fails to recognize that a local area problem may evolve into a wider area problem depending on the load, time of day, recent contingencies and other factors. A well-defined process for determining what is (and what is not) a reportable event is essential.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?

Yes                       No

Comments

### Requirement 201 - Interconnection Reliability Operating Limit Identification

3. Do you agree with the requirement?

Yes                       No

4. Do you agree with the measures?

Yes                       No

5. Do you agree with the compliance monitoring process?

Yes                       No

6. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 201:

ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact outside of the New England Area following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC within 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.

By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation if it cleared in less than 30 minutes.

**Requirement 202 - Monitoring**

- 7. Do you agree with the requirement?  
 Yes                       No
  
- 8. Do you agree with the measures?  
 Yes                       No
  
- 9. Do you agree with the compliance monitoring process?  
 Yes                       No
  
- 10. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 202:

ISO-NE believes that, as stated above, data should not be archived unless the limit is not cleared within 30 minutes. Additionally, we suggest the data retention requirement of three years be modified to a 12-month rolling retention.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?  
 Yes                       No
12. Do you agree with the measures?  
 Yes                       No
13. Do you agree with the compliance monitoring process?  
 Yes                       No
14. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 203:

ISO-NE requests the drafting team to provide their thoughts and incorporate allowances in the compliance area for EMS “down time” for maintenance or to switch over to backup system should problems arise.

ISO-NE suggests that more frequent in-day analyses, based on changed system conditions to predict system performance in the coming hours, be required. Again, we believe this relates directly to “hardening up” the  $T_v$  value (i.e. if  $T_v$  is fifteen minutes, how does the ‘at least every 30 minutes’ requirement support reliable operation regarding that specific limit?).

**Requirement 204 - Actions**

15. Do you agree with the requirement?  
 Yes                       No
16. Do you agree with the measures?  
 Yes                       No
17. Do you agree with the compliance monitoring process?  
 Yes                       No
18. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 204:

ISO-NE also suggests adding “footnote 1” that appears on page 10 to the Level one non-compliance measure to capture the thought that no overt action is sometimes an acceptable action.

ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact outside of the New England Area following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC within 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.

## **Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.

We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation if it cleared in less than 30 minutes.

### **Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes

No

20. Do you agree with the measures?

Yes

No

21. Do you agree with the compliance monitoring process?

Yes

No

22. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 205:

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206:

Under the Section 4.3.1 “Copies of transmittal cover letters...” may not be an appropriate measure for instances of notification of missing data. For example, most of the data required is transmitted electronically from field equipment, through ICCP/SCADA, and into the EMS. Where would such “cover letters” fall in this process?

Regarding the level of non-compliance for not providing data to the reliability authority, ISO-NE believes that there should be some differentiation between not submitting any data and submitting partial data or new/additional data and perhaps there needs to be some more granularity in the description of what constitutes non-compliance.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207:

ISO-NE again suggests that provisions be made for mitigating actions which were not previously identified by study, but cleared the limit violation. If these provisions are not included, it may restrict the actions that may be taken and, ultimately, adversely impact reliability (i.e. there may be actions that can be taken in real-time, given an existing network configuration which was not envisioned at the time the operational analysis was done; however, if NERC Standards mandate that an action plan be followed, these actions may not be taken or seriously considered).

All data retention requirements of three years should be modified to a 12-month rolling retention.

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Yes

No

33. Do you agree with the compliance monitoring process?

Yes

No

34. Do you agree with the levels of non-compliance?

Yes

No

Comments about Requirement 208:

Although we agree with the level four instance of non-compliance, it would be beneficial for the compliance monitor to require data and other information surrounding the inaction.

**35. List any Regional or Interconnection Differences for this standard:**

**36. Notifying the Compliance Monitor**

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

**37. Any other comments on this standard?**

ISO-NE is adamantly opposed to monetary sanctions and believes that letters of increasing severity are a much more effective compliance tool for ensuring adherence to standards.

ISO-NE also believes there is a lack of coordination between the standard drafting teams and has noted instances where one team felt an issue was addressed in a separate standard to later learn it was not. As an example, with respect to the Balancing Resources standard, transmission overloads that are caused by poor control are not covered by this standard unless they reach a high level IROL. It later was identified that where this was thought to have been covered, the Operate Within Limits Standard, it was not. We would suggest that there be technical oversight as we go forward with these processes to ensure there are no “gaps” or critical reliability issues that are not addressed in the resultant standards.

ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact outside of the New England Area following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC within 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.

By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.

## **Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation if it cleared in less than 30 minutes.

From a global perspective, it would be a prudent action to place the NERC RS development in a moratorium until the investigation into the August 14<sup>th</sup> blackout cause is completed and determinations have been made. There could be new reliability issues that need to be captured in the developing RS that need to be incorporated into the upcoming draft RS.

ISO-NE also seeks explanation for drawing the line at addressing only instability, cascading outages and separation. For example, what standard, if any, will address the scenario where an entity operates their system to cause a sizable thermal overload on a transmission line in another entity's system. (e.g. a transmission line burns down if the affected entity does not take corrective action).



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 2 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)  
The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_02) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>  
E-mail this form between July 1–August 29, 2003, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

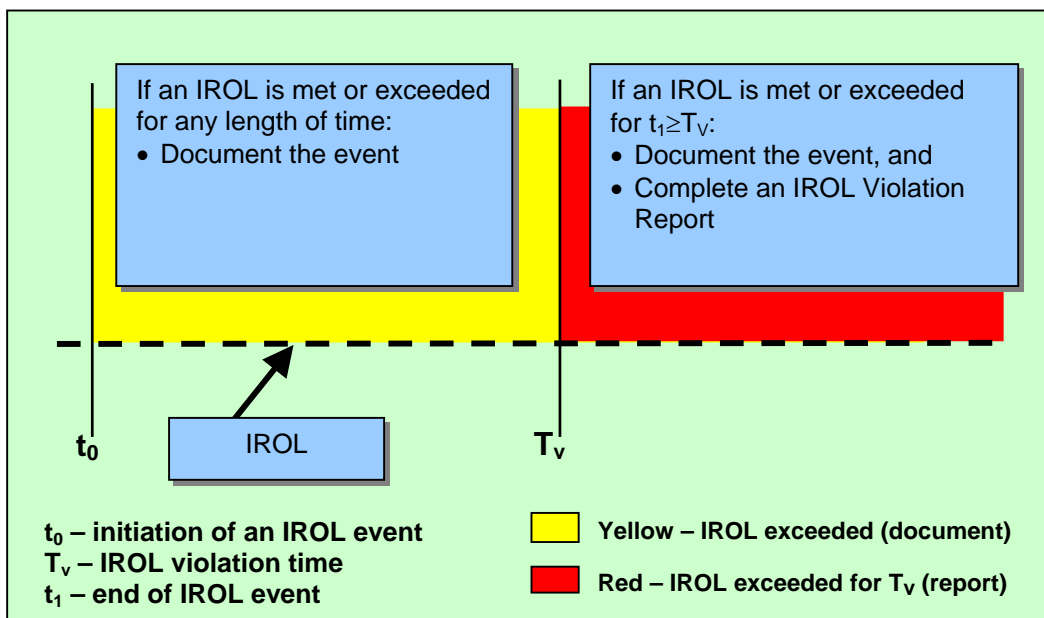
If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

### Major Changes to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first posting of this standard. You can see the Standards Drafting Team’s consideration of those comments at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

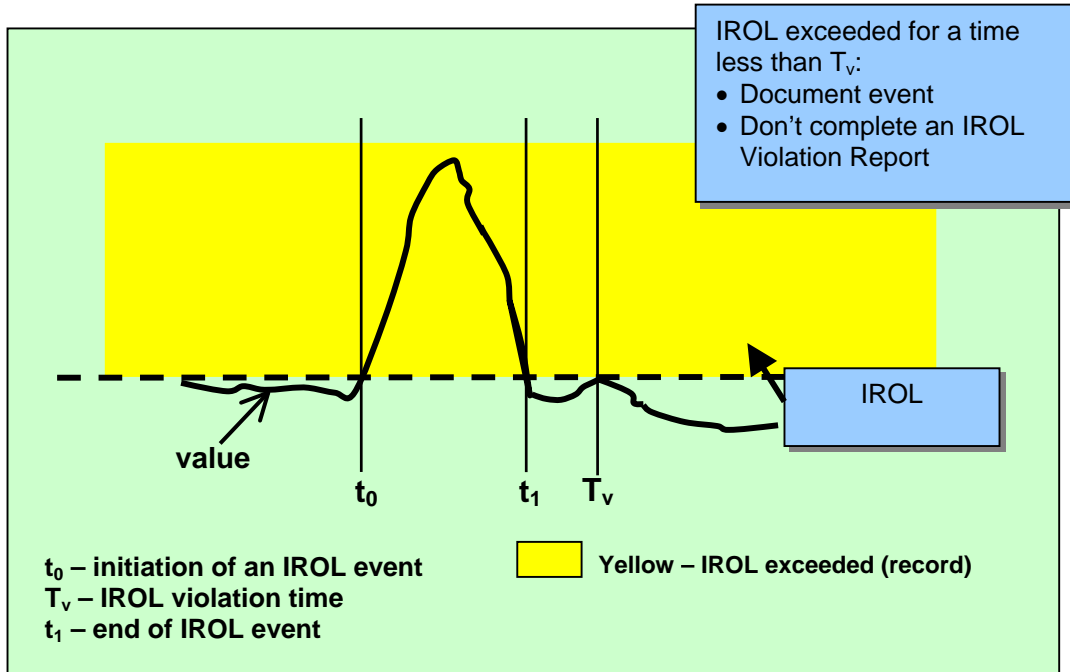
**Definition of System Operating Limits Addressed by this Standard.** The system operating limits being addressed by this standard are called, ‘interconnection reliability operating limits’ or ‘IROLs.’ Each IROL is a system operating limit established by the Reliability Authority following the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes.

When an IROL is exceeded (operating in the ‘yellow’ area in the following figure), then the RA must act or direct others to act. The clock starts ticking once the value is equal to or greater than the IROL. (This is  $t_0$ .) The clock continues to tick until the value is returned to a magnitude that is less than the IROL. Note that the value must remain below the IROL for a minimum of 30 seconds for the clock to stop. (The end of the event is marked by  $t_1$ .) If the duration of the event is less than  $T_v$ , then the event must be documented. If the duration of the event is equal to or greater than  $T_v$  (enters the red area in the following figure), then the event must be documented and reported to the Compliance Monitor.

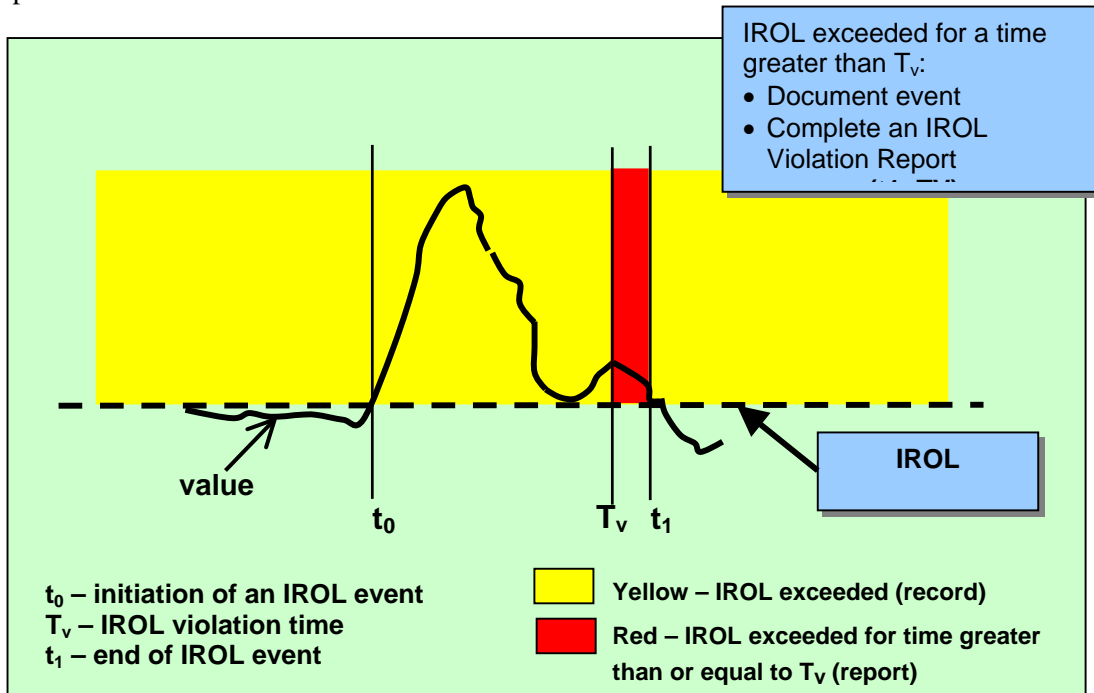


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The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (when the value enters the ‘yellow’ area) and continues to the end of the event  $t_1$ , when the value returns to a magnitude that is less than the IROL and remains under the IROL for at least 30 seconds. In this example,  $t_1$  is less than  $T_v$ , and the event must be documented, but the event does not need to be reported to the Compliance Monitor with an IROL Violation Report.



The following figure provides an example of an event where some value exceeds its IROL. The clock starts ticking at  $t_0$  (enters the ‘yellow area’) and continues to the end of the event, when the value returns to a magnitude that is less than the IROL and remains below the IROL for at least 30 seconds. In this example,  $t_1$  is greater than  $T_v$  (enters the ‘red area’), and the event must be documented and reported to the Compliance Monitor.



## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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**Requirement to Establish a List of IROLs.** When this standard was first drafted, the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Team (Facility Ratings Team) was still working on its SAR. The Facility Ratings Team developed a definition of a system operating limit, but did not develop a term to identify the subset of system operating limits addressed by this standard. This version of this standard includes a new requirement that the RA or PA identify the facilities in the reliability area that are subject to IROLs, and that the RA or TOP identify the IROLs within that reliability area. The list of facilities subject to IROLs is expected to remain relatively constant, with a change or two in a year – but the list of IROLs is dynamic and could change daily.

**TOP Requirements.** The first version of this standard included several requirements for Transmission Operators that were identical, or nearly identical, to requirements for the Reliability Authority. Several commenters indicated that these redundant requirements were inappropriate. Some commenters indicated the TOP requirements were inappropriate because they could lead to operating confusion by having multiple entities trying to control the same limit. Other commenters indicated that having the same requirement assigned to both the RA and the TOP wasn't supported in the Functional Model. (Under the Functional Model, each responsibility is assigned to a single function, and no responsibility is assigned to more than one function.) Other commenters indicated that under the Functional Model, the Transmission Operator has the following responsibility:

- “Provides local network integrity by defining operating limits, developing contingency plans, and monitoring operations.”

This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority. Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages.

For these reasons, this second version of the standard does not contain the following requirements for the TOP:

- 202 - The Transmission Operator (TOP) shall monitor (in real time) the system operating limits (identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system) and the actual real time data associated with those limits.
- 204 - The Transmission Operator (TOP) shall specify and collect the data it needs (from its associated Balancing Authorities (BAs), Interchange Authorities (IAs), Generators and Reliability Authority (RA) and other associated TOPs] to maintain the models needed to support real time monitoring and reliability analyses.
- 211 - The Transmission Operator (TOP) shall perform reliability analyses to identify where on its system the TOP may encounter problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 213 - The Transmission Operator (TOP) shall use the results of real time monitoring and/or reliability analyses to take actions necessary to prevent/mitigate identified problems that could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.
- 215 - The Transmission Operator (TOP) shall have a documented mitigation plan that identifies actions to be taken to prevent exceeding an identified system operating limit.
- 217 - The Transmission Operator (TOP) shall document instances of exceeding identified system operating limits

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Because several commenters indicated a desire to have requirements that address the TOP's control of its system operating limits, the SDT has sent a letter to the Director of Standards to apprise him of the situation and request appropriate follow-up.

### **Requirement to Follow RA Directives**

Several commenters indicated there should be a requirement for TOPs to follow the RA's directives. The functional model includes the following under the functional relationships of the RA:

- Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities

In preventing or relieving IROLs, the RA may direct not only the TOP, but also the BA, and IA and these functions were added to this new requirement to follow RA directives.

The SDT could not identify any actions the TSP would take to prevent or relieve instances of exceeding IROLs, and did not include the TSP in the list of functions that must comply with the RA's directives.

**RA to RA Coordination.** Several commenters indicated a need to add a requirement for the Reliability Authority to coordinate its actions with other Reliability Authorities. There is another standard called, "Coordinate Operations" that addresses the coordination between Reliability Authorities.

**Levels of Non-compliance.** There were many comments submitted, asking that the SDT include more than one level of non-compliance for each requirement. The SDT considered this, and added more levels in some cases, but not in all cases. These new standards are very different from the existing Operating Policies and Planning Standards. The new standards provide much less specificity on 'how' to achieve the performance requirement – and attempt to describe more objective performance goals. From the SDT's perspective, either the performance goal is met or it isn't met – there isn't a gray area where partial credit is appropriate. In this standard, the focus is on a subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. Implementing a system that 'forgives' RAs for missing this performance goal seems inappropriate to the SDT. As you review the revised standard, the SDT asks that you consider the ramifications of not meeting the requirement. If the ramifications are severe enough, then consider whether multiple levels of non-compliance are appropriate.

**RA Responsibility for Effort or Achievement.** This standard includes a requirement that the RA act or direct others to act to return to an operating state where no IROL has been exceeded before the time of the event exceeds the IROL's  $T_v$ . Several commenters suggested that the RA should not be penalized if the RA directed others to act, but they failed to act in time to prevent exceeding an IROL for its  $T_v$ . The SDT understands that there is division in the industry on this issue, and asks that you pay special attention to the levels of non-compliance in this standard. The SDT believes that the RA must be held accountable for achieving results – not just for trying to achieve those results.

**Compliance Monitoring Process.** There were several comments submitted with questions about the compliance monitoring process and the terminology used to define how compliance will be administered. The Reliability Standards Process Manual includes the following table that identifies what compliance elements must be addressed within each standard. Standards Drafting Teams are responsible for drafting the Compliance Monitoring Process for each standard, and for identifying Levels of Non-compliance. The Sanctions table is referenced in each standard, but is updated each year as part of the Compliance Program.

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Compliance Monitoring Process	Defines for each measure: <ul style="list-style-type: none"> <li>– The specific data or information that is required to measure performance or outcomes.</li> <li>– The entity that is responsible to provide the data or information for measuring performance or outcomes.</li> <li>– The process that will be used to evaluate data or information for the purpose of assessing performance or outcomes.</li> <li>– The entity that is responsible for evaluating data or information to assess performance or outcomes.</li> <li>– The time period in which performance or outcomes is measured, evaluated, then reset.</li> <li>– Measurement data retention requirements and assignment of responsibility for data archiving.</li> </ul>
Levels of Non-Compliance	Defines the levels of non-compliance for each measure, typically based on the actual or potential severity of the consequences of non-compliance.
Sanctions	Defines all penalties or sanctions associated with non-compliance, typically based on level of non-compliance and number of offenses.

The following information was provided by the Director of Compliance to help teams identify the compliance monitoring process for each requirement in the standard.

- **Self-Certification** – A process whereby an entity submits a form to its Compliance Monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard. Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed each year.
- **Periodic Reporting** – An established monitoring and reporting process (to measure compliance with one or more requirements for a standard) with a defined frequency such as monthly reports, or quarterly reports. Each entity submits a form to its Compliance Monitor per the announced frequency.
- **Spot Reporting or Spot Reviews** – A monitoring and reporting process (to measure compliance with one or more requirements for a standard) without an announced schedule. Each entity submits a form to its Compliance Monitor when requested by that Compliance Monitor.
- **Exception Reporting** - A reporting process where, when an entity’s performance meets certain criteria, such as exceeding certain operating limits, that entity is responsible for reporting its performance to its Compliance Monitor.
- **Triggered Investigation** – An investigation initiated when the Compliance Monitor becomes aware of operational performance that has jeopardized reliability of the bulk electric system. The intent of the investigation is to verify that the entity responsible is aware of the seriousness of any infractions and to determine if the unreliable performance was an aberration or part of a pattern of unreliable operational performance.

**Definitions.** The last comment form asked if there were any terms that should be defined as part of the development of this standard. Each term that is in the revised standard has been defined. None of the terms was in the NERC Terms Used in the Policies, but several of the terms were in the NERC Glossary. If the term was previously defined as part of the NERC Glossary, we’ve adopted that definition. Several of the terms related to the Functional Model, and we’ve included the definitions provided in the Functional Model.

The SDT thanks all who contributed comments on the first posting of this standard. Your feedback provided the guidance needed to revise this standard!



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Background**

1. Do you agree with the definitions provided in the front of this standard?  
 Yes                       No

Identify any definitions that you feel need to be revised, and if possible provide a suggested revision. Assuming that the intent of including the definitions is a placeholder until a new Glossary is developed, then it is appropriate that the definitions be provided with the standard. There is a risk of a conflicting definition if more than one document. The only definitions that should appear in the Standard should be those specific to THIS standard and NOT defined in a higher level or more authoritative document. There is/was a NERC Glossary of Terms that contains consensus definitions of terms (including BES, instability, etc.). There is a clear risk of writing a new or conflicting definition.

2. Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?  
 Yes                       No

Comments:

Conditionally that it cannot be interpreted to absolve or insulate the TOP from responsibility for following the directive(s) of the RA.

**Requirement 201 - Interconnection Reliability Operating Limit Identification**

3. Do you agree with the requirement?  
 Yes                       No
4. Do you agree with the measures?  
 Yes                       No
5. Do you agree with the compliance monitoring process?  
 Yes                       No
6. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 201: While 201.4.1 states "self-certification" who is the ultimate arbiter of what is the "complete list" of facilities and limits? The levels of non-compliance do not allow for degrees of compliance (e.g., list is not complete). We disagree with the imposition of monetary sanctions as it has not been demonstrated to be an effective means of achieving compliance.

**Requirement 202 - Monitoring**

7. Do you agree with the requirement?  
 Yes                       No
8. Do you agree with the measures?  
 Yes                       No
9. Do you agree with the compliance monitoring process?  
 Yes                       No
10. Do you agree with the levels of non-compliance?

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Yes                       No

Comments about Requirement 202: The levels of non-compliance do not allow for degrees of compliance (e.g., list is not complete). We disagree with the imposition of monetary sanctions as it has not been demonstrated to be an effective means of achieving compliance.

**Requirement 203 - Analyses and Assessments**

11. Do you agree with the requirement?

Yes                       No

12. Do you agree with the measures?

Yes                       No

13. Do you agree with the compliance monitoring process?

Yes                       No

14. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 203: the general nature of this requirement seems “open-ended” and does not reflect the reality of system analysis capabilities. R203.2.1.1 appears to require day-ahead assessment of voltage and stability, and R203.2.1.2 requires that assessment be performed every 30-minutes. Analysis of voltage or transient stability is not possible in a (near) real-time environment, and may not be practical even in a day-ahead context. Data to perform such analysis may also be required from planning, balancing and scheduling authorities and market operations. Should the Planning Authority be required to evaluate the “maintainability” of the “as designed” system to insure that system security can be preserved during equipment maintenance outages?

We disagree with the imposition of monetary sanctions as it has not been demonstrated to be an effective means of achieving compliance.

**Requirement 204 - Actions**

15. Do you agree with the requirement?

Yes                       No

16. Do you agree with the measures?

Yes                       No

17. Do you agree with the compliance monitoring process?

Yes                       No

18. Do you agree with the levels of non-compliance?

Yes                       No

Comments about Requirement 204: The level of compliance does not recognize that there could be frequent occurrences where a limit is exceeded and then clears with no action being required or taken – that no action was taken could be (incorrectly) interpreted as a compliance violation for which there was no IROL violation. There are also examples of system limits that can be violated by external cause for which the RA has no control over – is the RA expected to take all actions (including shed



**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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firm load) to correct for a condition which it neither caused, nor has the means to correct through other means?

We disagree with the imposition of monetary sanctions as it has not been demonstrated to be an effective means of achieving compliance.

**Requirement 205 - Data Specification**

19. Do you agree with the requirement?

Yes  No

20. Do you agree with the measures?

Yes  No

21. Do you agree with the compliance monitoring process?

Yes  No

22. Do you agree with the levels of non-compliance?

Yes  No

Comments about Requirement 205: Entities providing data should be expanded to include the Planning authority, loads (and other PSE, etc.). Measures does not recognize that certain aspects of data communication/collection can take weeks/months to implement, and the process of getting data for new facilities needs to be started with the Planning authority – hardly a matter of 5 days. The EMS systems being used by RAs are at a point that manual process is ineffective (if even possible) – the standard should encourage increased functionality of automated back-up systems or redundant EMS capabilities to insure continuity of data and functionality.

205.1.3 remove phrase “that has facilities monitored by the reliability authority”

We disagree with the imposition of monetary sanctions as it has not been demonstrated to be an effective means of achieving compliance.

**Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**Requirement 206 - Data Provision**

23. Do you agree with the requirement?  
 Yes                       No
24. Do you agree with the measures?  
 Yes                       No
25. Do you agree with the compliance monitoring process?  
 Yes                       No
26. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 206: Entities providing data should be expanded to include the Planning authority, loads (and other PSE, etc.).  
We disagree with the imposition of monetary sanctions as it has not been demonstrated to be an effective means of achieving compliance.

**Requirement 207 - Action Plan**

27. Do you agree with the requirement?  
 Yes                       No
28. Do you agree with the measures?  
 Yes                       No
29. Do you agree with the compliance monitoring process?  
 Yes                       No
30. Do you agree with the levels of non-compliance?  
 Yes                       No

Comments about Requirement 207: Requirement is too vague; what is an "action plan" – please define. The 207.2.1.1 measure is a conditional definition of "action plan" and, as such, should be in the glossary of terms. We disagree with the imposition of monetary sanctions as it has not been demonstrated to be an effective means of achieving compliance.

**Requirement 208 – Reliability Authority Directives**

31. Do you agree with the requirement?  
 Yes                       No
32. Do you agree with the measures?  
 Yes                       No
33. Do you agree with the compliance monitoring process?  
 Yes                       No
34. Do you agree with the levels of non-compliance?  
 Yes                       No

## Comment Form for 2<sup>nd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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Comments about Requirement 208: RAs using real-time security constrained dispatch may automatically correct for limit violations by adjusting output of one or more generators. The process is automatic and may only generate logs entries on an exception basis – when a generator fails to follow dispatch signals. It should also be noted that these systems typically have performance penalties as part of the energy accounting process and therefore the imposition of monetary sanctions would not be necessary to achieve compliance.

### 35. List any Regional or Interconnection Differences for this standard:

### 36. Notifying the Compliance Monitor

One of the elements in Requirement 205 - Data Specification & Collection is:

- *The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.*

In response to the first posting of this draft standard, several commenters indicated that requirement should not be included in the standard. The reason provided was:

- *The reference to notification of Compliance Monitor should not be specific to this or another standard and should be centralized in a compliance document.*

The SDT originally included this to ensure that the compliance monitor would know if some entity had failed to provide the RA with critical data – the intent was to give the Compliance Monitor information to start a ‘triggered investigation’. The existing compliance program documents do not contain any documentation to address the need to notify the compliance monitor. The SDT is undecided about whether the requirement to notify the compliance monitor should be included in this standard.

Do you think this standard should include language that requires the RA to notify its compliance monitor – or do you think notification of the compliance monitor should be addressed more globally in a Compliance Enforcement Program document?

**Include in this standard**

**Include in a Compliance Enforcement Program Document**

**Comments**

### 37. Any other comments on this standard?

These definitions will be posted and balloted along with the standard, but will not be restated in the standard. Instead, they will be included in a separate “Definitions” section containing definitions relevant to all standards that NERC develops.

### Definitions

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk transmission system.

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location.

**Generator Owner:** The entity that owns the generator.

**Instability:** The inability of the transmission system to maintain a state of equilibrium during normal and abnormal system conditions or disturbances.

**Interconnection Reliability Operating Limit:** A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

**Interconnection Reliability Operating Limit Event:** An instance of exceeding an Interconnection Reliability Operating Limit for any length of time.

**Interconnection Reliability Operating Limit Event Duration:** The length of time an Interconnection Reliability Operating Limit is exceeded. The duration is measured from the point where the limit is first exceeded and ends when the value drops below the limit and remains below the limit for at least 30 seconds.

**Occurrence Period (Performance-reset Period):** The time period in which performance is measured, evaluated, and then reset.

**Operational Planning Analysis:** An analysis of the expected system conditions, given the load forecast(s), and known system constraints, some examples being transmission facility outages, generator outages, and equipment limitations.

**Real-time:** Present time as opposed to future time.

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

**Real-time Data:** Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Reliability Authority Area:** The collection of generation, transmission, and loads within the boundaries of the organization performing the Reliability Authority function. Its boundary coincides with one or more Balancing Authority areas.

**Self-certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

**T<sub>v</sub>:** The maximum time that an Interconnection Reliability Operating Limit can be exceeded without compliance sanctions being applied.

**Transmission Operator:** The entity that operates the transmission Facilities and executes switching orders.

**Uncontrolled Separation:** The unplanned break-up of an interconnection, or portion of an interconnection, that is not the result of automatic action by a special protection system or remedial action scheme operating correctly.

**Wide Area Impact:** The impact of an event that, if left untended, could lead to voltage instability, cascading outages or uncontrolled separation that jeopardizes the reliability of an interconnection. The geographic size of the area affected by such an event is always larger than the local area monitored by a single transmission operator and may also be larger than a single Reliability Authority's area.

## 200 — OPERATE WITHIN INTERCONNECTION RELIABILITY OPERATING LIMITS

201	Interconnection Reliability Operating Limit Identification
202	Monitoring
203	Analyses and Assessments
204	Actions
205	Data Specification and Collection
206	Data Provision
207	Action Plan
208	Reliability Authority Directives

1. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.
2. **Effective Date:** This standard will become effective on the first day of the month following the month that the NERC Board of Trustees adopts the standard.
3. **Applicability:** These requirements apply to entities performing various electric system functions, as defined in the functional model approved by the NERC Board of Trustees in June 2001. NERC is now developing standards and procedures for the identification and certification of such entities. Until that identification and certification is complete, this standard applies to the existing entities (such as control areas, transmission owners and operators, and generator owners) that are currently performing the defined functions.

In this standard, the terms *Balancing Authority*, *Generator Operator*, *Generator Owner*, *Interchange Authority*, *Load-serving Entity*, *Reliability Authority*, *Transmission Operator*, and *Transmission Owner* refer to the entities performing these functions as defined in the functional model.

**201 IROL Identification**

**(a) Requirements**

- (1) The Reliability Authority shall identify and document which Facilities (or groups of Facilities) in the Reliability Authority's Reliability Authority Area are subject to Interconnection Reliability Operating Limits.
- (2) The Reliability Authority shall identify each Interconnection Reliability Operating Limit within the Reliability Authority's Reliability Authority Area.
  - (i) The Reliability Authority shall identify a  $T_v$  for each Interconnection Reliability Operating Limit.

**(b) Measures**

- (1) The Reliability Authority shall have a list of Facilities (or groups of Facilities) in the Reliability Authority's Reliability Authority Area that are subject to Interconnection Reliability Operating Limits.
  - (i) The Reliability Authority shall have evidence it reviews and updates the list of Facilities to reflect changes in system topology.
- (2) The Reliability Authority shall have a list of Interconnection Reliability Operating Limits for the Reliability Authority's Reliability Authority Area.
  - (i) The Reliability Authority shall have a  $T_v$  for each Interconnection Reliability Operating Limit.
- (3) The Reliability Authority shall have evidence that it updates the list of Interconnection Reliability Operating Limit values to reflect current system conditions.

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep data on facilities and limits for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall have the following available upon the request of its Compliance Monitor:
  - (i) List of Facilities (or groups of Facilities) in the Reliability Authority's Reliability Authority Area that are subject to Interconnection Reliability Operating Limits.

- (ii) List of Interconnection Reliability Operating Limits for the Reliability Authority's Reliability Authority Area.
- (iii) Evidence that the list of Facilities subject to Interconnection Reliability Operating Limits and the list of Interconnection Reliability Operating Limits were updated.

**(e) Levels of Noncompliance**

- (1) Level one: Not applicable
- (2) Level two: Not applicable
- (3) Level three: Either the list of Interconnection Reliability Operating Limits or the list of Facilities subject to Interconnection Reliability Operating Limits was not updated.
- (4) Level four: No list of Interconnection Reliability Operating Limits or no list of Facilities subject to Interconnection Reliability Operating Limits exists for the Reliability Authority's Reliability Authority Area.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where financial sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.



## **202 Monitoring**

### **(a) Requirements**

- (1) The Reliability Authority shall perform Real-time Monitoring of system operating parameters to determine if the Reliability Authority Area is operating within its Interconnection Reliability Operating Limits.

### **(b) Measures**

- (1) The Reliability Authority shall have Interconnection Reliability Operating Limits available for its operations personnel's Real-time use.
- (2) The Reliability Authority shall have Real-time Data available in a form that system operators can compare to the Interconnection Reliability Operating Limits.
- (3) The Reliability Authority shall monitor system operating parameters and compare these against its Interconnection Reliability Operating Limits.

### **(c) Regional Differences**

None identified.

### **(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep data on limits for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall demonstrate the following upon the request of the Compliance Monitor:
  - (i) System operators actively monitoring and comparing Real-time system operating parameters associated with Interconnection Reliability Operating Limits.

### **(e) Levels of Noncompliance**

- (1) Level one: Not applicable
- (2) Level two: Not applicable
- (3) Level three: Not applicable
- (4) Level four: A level four noncompliance occurs if any of the following conditions are present:
  - (i) Interconnection Reliability Operating Limits not available to operations personnel for Real-time use; or
  - (ii) Real-time Data not available in a form that can be compared to the Interconnection Reliability Operating Limits; or

- (iii) System operating parameters not monitored and compared against Interconnection Reliability Operating Limits.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where financial sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**203 Analyses and Assessments**

**(a) Requirements**

- (1) The Reliability Authority shall perform Operational Planning Analyses to assess whether the planned Bulk Electric System operations within the Reliability Authority's Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits.
- (2) The Reliability Authority shall perform Real-time Assessments to determine if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.

**(b) Measures**

- (1) The Reliability Authority shall identify operating situations or events that impact its Reliability Authority Area's ability to operate without exceeding any identified Interconnection Reliability Operating Limits.
  - (i) The Reliability Authority shall conduct an Operational Planning Analysis at least once each day, evaluating the next day's projected system operating conditions.
  - (ii) The Reliability Authority shall conduct a Real-time Assessment periodically, but at least once every 30 minutes.

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall identify the following upon the request of the Compliance Monitor:
  - (i) The time the most recent Operational Planning Analysis was conducted.
  - (ii) Whether the planned Bulk Electric System operations within the Reliability Authority's Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits.
  - (iii) The time the most recent Real-time Assessment was conducted.
  - (iv) Whether the Real-time Assessment identified if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.

**(e) Levels of Noncompliance**

- (1) Level one: Not applicable
- (2) Level two: Not applicable
- (3) Level three: A level three noncompliance exists if any of the following conditions are present:
  - (i) No indication that an Operational Planning Analysis was conducted at least once each day.
  - (ii) No indication that a Real-time Assessment was conducted at least once each 30 minutes.
- (4) Level four: A level four noncompliance exists if either of the following conditions are present:
  - (i) The Reliability Authority could not identify whether the planned Bulk Electric System operations within the Reliability Authority's Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits, based on the results of the most recent Operational Planning Analysis.
  - (ii) The Reliability Authority could not identify whether the most recent Real-time Assessment identified if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where financial sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**204 Actions**

**(a) Requirements**

- (1) The Reliability Authority shall act<sup>1</sup> or direct others to act to:
  - (i) Prevent instances where Interconnection Reliability Operating Limits may be exceeded.
  - (ii) Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded.
- (2) The Reliability Authority shall document instances of exceeding Interconnection Reliability Operating Limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding Interconnection Reliability Operating Limits for time greater than  $T_v$ .
  - (i) The RA shall measure the duration of the event from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

**(b) Measures**

- (1) The Reliability Authority shall document each instance where actions are taken or directives are issued to mitigate the magnitude and duration of exceeding an Interconnection Reliability Operating Limit.
  - (i) The Reliability Authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)
- (2) The Reliability Authority shall report each instance of exceeding an Interconnection Reliability Operating Limit for time greater than  $T_v$ .
  - (i) The Reliability Authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its Compliance Monitor within five business days of the initiation of the event. (The report shall include the date and time of the event, identification of which Interconnection Reliability Operating Limit was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the Interconnection Reliability Operating Limit, actions taken or directives issued and the time these were initiated or issued, and explanation of results of actions or directives.)

**(c) Regional Differences**

None identified.

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<sup>1</sup> Note that the Reliability Authority may choose to take 'no overt action' and this may be an acceptable action as long as it is documented. Taking 'no overt action' is not the same as ignoring the problem.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep Interconnection Reliability Operating Limit Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall have the following available upon the request of its Compliance Monitor:
  - (i) Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an Interconnection Reliability Operating Limit and the actions or directives issued for each of these instances.
  - (ii) Interconnection Reliability Operating Limit Violation Reports.

**(e) Levels of Noncompliance <sup>2</sup>**

- (1) Level one: Interconnection Reliability Operating Limit exceeded for a time less than or equal to  $T_v$  and no documentation to indicate actions taken or directives issued to mitigate the instance.
- (2) Level two: Not applicable
- (3) Level three: Not applicable
- (4) Level four: Interconnection Reliability Operating Limit exceeded for time greater than  $T_v$ .

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. Level one noncompliance sanctions shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions. Level four noncompliance sanctions shall be the greater of the fixed dollar sanctions listed in the matrix, or the number of megawatts above the Interconnection Reliability Operating Limit multiplied by the dollar value for the number of times of noncompliance.

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<sup>2</sup> Note that the Reliability Authority may choose to take 'no overt action' and this may be an acceptable action as long as it is documented. Taking 'no overt action' is not the same as ignoring the problem.

**205 Data Specification and Collection**

**(a) Requirements**

- (1) The Reliability Authority shall specify and collect the data it needs to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits. The Reliability Authority shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Authority, and from entities that provide Facility status to the Reliability Authority. This includes specifying and collecting data from the following:
  - (i) Balancing Authorities
  - (ii) Generator Owners
  - (iii) Generator Operators
  - (iv) Load-serving Entities
  - (v) Reliability Authorities
  - (vi) Transmission Operators
  - (vii) Transmission Owners
- (2) The Reliability Authority shall specify when to supply data (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
- (3) The Reliability Authority shall notify its Compliance Monitor when both of the following conditions are present:
  - (i) An entity that has data needed to support Real-time Monitoring, Operational Planning, or Real-time Assessments relative to operating within the Reliability Authority's Reliability Authority Area has not provided data as specified, and
  - (ii) The Reliability Authority was unable to resolve the issue with the entity responsible for providing the data.

**(b) Measures**

- (1) The Reliability Authority shall have a documented specification for data needed to build and maintain models needed to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments relative to Interconnection Reliability Operating Limits.
  - (i) Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.
  - (ii) Specification shall address the data provision process to use when automated Real-time system operating data is unavailable.

- (2) The Reliability Authority shall have evidence that it has distributed its data specification to entities that have Facilities monitored by the Reliability Authority and to entities that provide Facility status to the Reliability Authority.
- (3) The Reliability Authority shall notify its Compliance Monitor when an entity that has Facilities monitored by the Reliability Authority, or an entity that provides Facility status to the Reliability Authority, does not provide data as specified and the Reliability Authority was unable to resolve the issue with the entity responsible for providing the data.
  - (i) If the Reliability Authority does not receive data as specified, and is unable to resolve the situation, then the Reliability Authority shall notify its Compliance Monitor within five business days of discovering that the data is missing.

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep its data specification(s) for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall have the following available upon the request of the Compliance Monitor:
  - (i) Data specification(s)
  - (ii) Proof of distribution of the data specification(s)

**(e) Levels of Noncompliance**

- (1) Level one: Data specification incomplete (missing either the list of required data, a mutually agreeable format, a timeframe for providing data, or a data provision process to use when automated real-time system operating data is unavailable).
- (2) Level two: No data specification or the specification not distributed to the entities that have Facilities monitored by the Reliability Authority and the entities that provide the Reliability Authority with Facility status.
- (3) Level three: Not applicable
- (4) Level four: Not applicable

**(f) Sanctions**



- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**206 Data Provision**

**(a) Requirements**

- (1) Each entity performing one of the following functions shall provide data, as specified, to the Reliability Authority(ies) with which it has a reliability relationship. The data is limited to data needed by the Reliability Authority to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits.
  - (i) Balancing Authorities
  - (ii) Generator Owners
  - (iii) Generator Operators
  - (iv) Load-serving Entities
  - (v) Reliability Authorities
  - (vi) Transmission Operators
  - (vii) Transmission Owners

**(b) Measures**

- (1) The responsible entity shall have evidence that it has provided data, as specified, to the requesting Reliability Authority, within the timeframe specified, in the mutually agreed upon format.

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The responsible entity shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period is 12 months from the last violation. The responsible entity shall keep data transmittal documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The responsible entity shall have the following available upon the request of the Compliance Monitor:
  - (i) Evidence indicating data was sent to the Reliability Authority or evidence that the entity responsible committed to providing the data identified in the specification.

**(e) Levels of Noncompliance**

- (1) Level one: Not applicable
- (2) Level two: Not applicable
- (3) Level three: Not applicable
- (4) Level four: Data was not provided to the Reliability Authority as specified and the situation was not resolved with the Reliability Authority.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**207 Action Plan**

**(a) Requirements**

- (1) The Reliability Authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its Interconnection Reliability Operating Limits.

**(b) Measures**

- (1) The Reliability Authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding Interconnection Reliability Operating Limits. The plan shall identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions.
  - (i) The action plan may be a process or procedure for preventing or mitigating instances of exceeding Interconnected Reliability Operating Limits. (Note: an emergency operations plan satisfies this requirement if the emergency operations plan addresses actions to prevent and mitigate instances of exceeding Interconnected Operating Reliability Limits.)

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period is 12 months from the last violation. The Reliability Authority shall keep its action plan for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.
- (3) The Reliability Authority shall make the following available for inspection by the Compliance Monitor upon request:
  - (i) Action plan

**(e) Levels of Noncompliance**

- (1) Level one: Action plan exists but wasn't coordinated with all involved and impacted entities.
- (2) Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities.
- (3) Level three: Not applicable
- (4) Level four: No action plan

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied

for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**208 Reliability Authority Directives**

**(a) Requirements**

- (1) The Transmission Operator, Balancing Authority, and Interchange Authority shall follow the Reliability Authority's directives to:
  - (i) Prevent instances where Interconnection Reliability Operating Limits may be exceeded.
  - (ii) Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded.
- (2) The responsible entity shall document the Reliability Authority's directives and the actions taken.

**(b) Measures**

- (1) The responsible entity shall follow the Reliability Authority's directives and shall document the directives and actions taken to meet the directives.
- (2) The responsible entity shall document via an operations log or other data source, the following for each directive it receives relative to an Interconnection Reliability Operating Limit:
  - (i) Date and time of directive received
  - (ii) Directive issued
  - (iii) Actions taken in response to directive

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The responsible entity shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint to assess performance.
- (2) The Performance-reset Period is 12 months from the last violation. The responsible entity shall keep its documentation for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.
- (3) The responsible entity shall make the following available for inspection by the Compliance Monitor upon request:
  - (i) Operations log or other data source(s) to show the following for each instance of being issued a Reliability Authority directive relative to an Interconnection Reliability Operating Limit:
    - 1) Date and time of each directive received
    - 2) Directive issued
    - 3) Actions taken in response to directive

**(e) Levels of Noncompliance**

- (1) Level one: The responsible entity followed Reliability Authority's directives relative to preventing or mitigating instances of exceeding Interconnection Reliability Operating Limits but did not document the date and time of each directive received, the directive received, and the actions taken in response to the directive.
- (2) Level two: Not applicable
- (3) Level three: Not applicable
- (4) Level four: The responsible entity did not follow the Reliability Authority's directives.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

### **Sanctions Table**

The following table is an approved table of Compliance Sanctions. This table of sanctions was developed by the Compliance Subcommittee as part of the NERC Compliance Enforcement Program and was approved by the NERC Board of Trustees. The enforcement matrix is divided into four levels of increasing noncompliance vertically and the number of violations in a defined period at a given level horizontally. In the enforcement matrix, note that there are three sanctions that can be used: a letter, a fixed fine, and a \$\$ per MW fine.

#### **Letter**

The letter is a sanction used to notify company executives, Regional officers, and regulators when an entity is noncompliant. The distribution of the letter varies depending on the severity of the noncompliance. It is used first to bring noncompliance the attention of those who can take action to bring the entity into compliance.

- Letter (A) — Letter to the entity's vice president level or equivalent informing the entity of noncompliance, with copies to the data reporting contact, and the entity's highest ranking Regional Council representative.
- Letter (B) — Letter to the entity's chief executive officer or equivalent, with copies to the data reporting contact, the entity's highest ranking Regional Council representative, and the vice president over the area in which noncompliance occurred.
- Letter (C) — Letter to the entity's chief executive officer and chairman of the board, with copies to the NERC president, regulatory authorities having jurisdiction over the noncompliant entity if requested by such regulatory authorities, the data reporting contact, the entity's highest ranking Regional Council representative, and the vice president over the area in which noncompliance occurred.

#### **Fixed Dollars**

This sanction is used when a letter is not enough and a stronger message is desired. Fixed dollars are typically assigned as a one-time fine that is ideal for measures involving planning-related standards. Many planning actions use forward-looking assumptions. If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome.

#### **Dollars per MW**

Dollars per MW sanctions are oriented toward operationally based standards. The MW can be load, generation, or flow on a line. Reasonableness of a sanction needs to be figured into assessing \$/MW penalties. Assessing large financial penalties is not the goal, but sending a message with proper emphasis on \$\$\$ can be controlled with the multiplier.



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<b>Occurrence Period Category</b>	<b>Number of Violations in Occurrence Period at a Given Level</b>			
1 <sup>st</sup> Period of Violations (Fully Compliant Last Period)	1	2	3	4 or more
2 <sup>nd</sup> Consecutive Period of Violations		1	2	3 or more
		\$ Sanction from Table; Letter (C) only if Letter (B) previously sent		
3 <sup>rd</sup> Consecutive Period of Violations			1	2 or more
			\$ Sanction from Table; Letter (C) only if Letter (B) previously sent	
4 <sup>th</sup> or greater Consecutive Period of Violations				1
				\$ Sanction from Table; Letter (C)

<b>Level of Noncompliance</b>	<b>Sanctions Associated With Noncompliance</b>			
Level 1	Letter (A)	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW
Level 2	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW
Level 3	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW
Level 4	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW	Letter (B) and \$10,000 or \$10 Per MW

**Interpreting the Tables:**

- These tables address penalties for violations of the same measure occurring in consecutive compliance reporting periods.
- If a participant has noncompliant performance in consecutive compliance reporting periods, the sanctions applied are more punitive.

# Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits

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## **Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

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### **Prerequisite Approvals**

The Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard must be implemented before this standard can be implemented.

### **Applicability During Transition to Functional Model**

The requirements in Standard 200 apply to entities performing various electric system functions, as defined in the functional model approved by the NERC Board of Trustees in June 2001. NERC is now developing standards and procedures for the identification and certification of such entities. Until that identification and certification is complete, these standards apply to the existing entities (such as control areas, transmission owners and operators, and generation owners and operators) that are currently performing the defined functions.

## Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits

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### Retirement of Sections of Operating Policies

Many elements contained in Standard 200 address the same or similar performance objectives as sections of Operating Policy 2, Operating Policy 4, Operating Policy 5, and Operating Policy 9. To eliminate duplication and minimize confusion, the following sections of existing Operating Policies should be retired when this standard is implemented. Justification for these retirements is provided in the tables on the following pages.

#### Operating Policy 2:

- Standard A.1. (just last 2 bullets)
- Standard A.1.2.
- Standard A.2.
- Standard A.2.1.
- Requirement A.1.
- Requirement A.1.1.
- Requirement A.1.2.
- Requirement B.5.

#### Operating Policy 4:

- Requirement A.1.
- Requirement B.3.
- Requirement B.3.1.
- Requirement B.4.
- Requirement B.4.1.
- Appendix 4BA

#### Operating Policy 5:

- Requirement 5.C.1.
- Requirement 5.C.2.

#### Operating Policy 9:

- Requirement A.1.
- Requirement A.1.1.
- Requirement A.1.2.

#### Other Changes:

- Operating Policy 4, Requirement A.2. should be 'tagged' to note that the requirement is no longer applicable to system operators working for entities performing the reliability authority function, but is still applicable to system operators working for entities performing the transmission operator function.



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### Policy Retirements or Revisions

The following tables identify the sections of existing Operating Policies that shall be retired when this standard is implemented.

Policy 2 — Transmission Language in Policy	Standard 200 Replacement Requirement
<p><b>Standard A.1.</b>  <b>Basic reliability requirement regarding single contingencies.</b>                      All CONTROL AREAS shall operate so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single contingency.</p>	<p>204. 1.1. The reliability authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul>
<p><b>Standard A.1.2.</b>  <b>Operating Security Limits.</b> Operating Security Limits define the acceptable operating boundaries.</p>	<p>201.1. The reliability authority shall identify and document which facilities (or groups of facilities) in the reliability authority’s reliability area are subject to interconnection reliability operating limits.</p> <p>201.2. The reliability authority shall identify each interconnection reliability operating limit within the reliability authority’s reliability area.</p> <ul style="list-style-type: none"> <li>▪ The reliability authority shall identify a <math>T_v</math> for each interconnection reliability operating limit.</li> </ul>
<p><b>Standard A.2.</b>  <b>Return from OPERATING SECURITY LIMIT Violation.</b>                      Following a contingency or other event that results in an OPERATING SECURITY LIMIT violation, the CONTROL AREA shall return its transmission system to within OPERATING SECURITY LIMITS soon as possible, but no longer than 30 minutes.</p>	<p>204.1.1. The reliability authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul>
<p><b>Standard A.2.1.</b>  <b>Reporting Non-compliance.</b> Each violation of this Standard shall be reported to the Regional Council and NERC Compliance Subcommittee within 72 hours.</p>	<p>204.1.2. The reliability authority shall document instances of exceeding interconnection reliability operating limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding interconnection reliability operating limits for time greater than <math>T_v</math>.</p>

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Policy 2 — Transmission Language in Policy	Standard 200 Replacement
<p><b>Requirement A.1.</b> Policies for dealing with transmission security. CONTROL AREAS, individually and jointly, shall develop, maintain, and implement formal policies and procedures to provide for transmission security. These policies and procedures shall address the execution and coordination of activities that impact inter- and intra-Regional security, including:</p> <ul style="list-style-type: none"> <li>▪ Equipment ratings</li> <li>▪ Monitoring and controlling voltage levels and real and reactive power flows</li> <li>▪ Switching transmission elements</li> <li>▪ Planned outages of transmission elements</li> <li>▪ Development of Operating Security Limits</li> <li>▪ Responding to OPERATING SECURITY LIMIT violations.</li> </ul>	<p><i>(Only highlighted items on the left should be retired.)</i></p> <p>201.2. The reliability authority shall identify each interconnection reliability operating limit within the reliability authority’s reliability area.</p> <p>The reliability authority shall identify a T<sub>v</sub> for each interconnection reliability operating limit.</p> <p>207.1.1. The reliability authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its interconnection reliability operating limits.</p> <p><i>(Operating Security Limits that, when exceeded may cause instability and cascading outages on the bulk electric system have now been defined as Interconnection Reliability Operating Limits (IROL) within this standard.)</i></p>
<p><b>Requirement A.1.1.</b> Responsibility for transmission security. When OPERATING SECURITY LIMIT violations occur, or are expected to occur, the CONTROL AREAS affected by and the CONTROL AREAS contributing to these violations shall implement established joint actions to restore transmission security.</p>	<p>204.1.1. The reliability authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul>

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Policy 2 — Transmission Language in Policy	Standard 200 Replacement
<p><b>Requirement A.1.2.</b> Action to keep transmission within limits. CONTROL AREAS shall take all appropriate action up to and including shedding of firm load in order to comply with Standard 2.A.2.</p>	<p>204.1.1. The reliability authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul> <p>208.1.1. The transmission operator, balancing authority, and interchange authority shall follow the reliability authority’s directives to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul>
<p><b>Requirement B.5.</b> <b>Preventing Voltage Collapse.</b> The SYSTEM OPERATOR shall take corrective action, including load reduction, necessary to prevent voltage collapse when reactive resources are insufficient.</p>	<p>204.1.1. The reliability authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul>



<p align="center"><b>Policy 4 — System Coordination</b></p> <p align="center"><b>Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>Section A — Monitoring System Conditions</b>  <b>Requirement A.1 Resources.</b> The system operator shall be kept informed of all generation and transmission resources available for use.</p>	<p><i>Keep for transmission operator’s system operators</i></p> <p>205.1.1. The reliability authority shall specify and collect the data it needs to support real-time monitoring, operational planning analyses, and real-time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits. The reliability authority shall collect this data from the entities performing functions that have facilities monitored by the reliability authority, and from entities that provide facility status to the reliability authority. This includes specifying and collecting data from the following:</p> <ul style="list-style-type: none"> <li>▪ Balancing authorities</li> <li>▪ Generator owners</li> <li>▪ Generator operators</li> <li>▪ Load-serving entities</li> <li>▪ Reliability authorities</li> <li>▪ Transmission operators</li> <li>▪ Transmission owners</li> </ul>
<p><b>Requirement A.2.</b>  <b>Transmission status and data.</b> System operators shall monitor transmission line status, MW and MVAR flows, voltage, LTC settings and status of rotating and static reactive resources.</p>	<p><i>Keep for transmission operator’s system operators</i></p> <p>202.1.1. The reliability authority shall perform real-time monitoring of system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.</p>

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<p align="center"><b>Policy 4 — System Coordination</b> <b>Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>B3 — Data required from control areas</b></p> <p><b>3. Data required from Control Areas.</b> Each CONTROL AREA shall provide its SECURITY COORDINATOR(S) with the Electric System Security Data that is necessary to allow THE SECURITY COORDINATOR(S) to perform its operational security assessments and coordinate reliable operations.</p> <p><b>3.1 Data.</b> CONTROL AREAS shall provide the types of data as listed in Appendix 4B, “Electric System Security Data, Section A, Electric System Security Data”, unless otherwise agreed to by the CONTROL AREAS and their SECURITY COORDINATOR(S).</p>	<p>206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>▪ Balancing authorities</li> <li>▪ Generator owners</li> <li>▪ Generator operators</li> <li>▪ Load-serving entities</li> <li>▪ Reliability authorities</li> <li>▪ Transmission operators</li> <li>▪ Transmission owners</li> </ul>
<p><b>4. Data exchange among SECURITY COORDINATORS.</b> Upon request, SECURITY COORDINATORS shall, via the ISN, exchange with each other Electric Security Data that is necessary to allow the SECURITY COORDINATORS to perform their operational security assessments and coordinate their reliable operations.</p>	<p>206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>▪ Balancing authorities</li> <li>▪ Generator owners</li> <li>▪ Generator operators</li> <li>▪ Load-serving entities</li> <li>▪ Reliability authorities</li> <li>▪ Transmission operators</li> <li>▪ Transmission owners</li> </ul>

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<p align="center"><b>Policy 4 — System Coordination</b></p> <p align="center"><b>Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>4.1. Data.</b> SECURITY COORDINATORS shall share with each other the types of data as listed in Appendix 4B, “Electric System Security Data, Section A, Electric System Security Data”, unless otherwise agreed to.</p>	<p>206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>▪ Balancing authorities</li> <li>▪ Generator owners</li> <li>▪ Generator operators</li> <li>▪ Load-serving entities</li> <li>▪ Reliability authorities</li> <li>▪ Transmission operators</li> <li>▪ Transmission owners</li> </ul>
<p><b>Appendix 4BA</b></p>	<p>205.1.1 The reliability authority shall specify and collect the data it needs to support real-time monitoring, operational planning analyses, and real-time assessments conducted relative to operating within its reliability area’s interconnection reliability operating limits. The reliability authority shall collect this data from the entities performing functions that have facilities monitored by the reliability authority, and from entities that provide facility status to the reliability authority. This includes specifying and collecting data from the following:</p> <ul style="list-style-type: none"> <li>▪ Balancing authorities</li> <li>▪ Generator owners</li> <li>▪ Generator operators</li> <li>▪ Load-serving entities</li> <li>▪ Reliability authorities</li> <li>▪ Transmission operators</li> <li>▪ Transmission owners</li> </ul>

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<p align="center"><b>Policy 5 — Emergency Operations Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>Requirement 5.C.1. Relieving security limit violations.</b> Each CONTROL AREA experiencing or materially contributing to an OPERATING SECURITY LIMIT violation shall take immediate steps to relieve the condition.</p>	<p>204.1.1. The reliability authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul> <p>208.1.1. The transmission operator, balancing authority, and interchange authority shall follow the reliability authority’s directives to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul>
<p><b>Requirement 5.C.2. Operator authority and responsibility.</b> SYSTEM OPERATORS having responsibility for the reliability of the transmission system within a CONTROL AREA, pool, etc., shall be given and shall exercise specific authority to alleviate OPERATING SECURITY LIMIT violations. The authority shall enable the SYSTEM OPERATOR to take timely and appropriate actions including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding load, etc.</p>	<p>204.1.1. The reliability authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul> <p>208.1.1. The transmission operator, balancing authority, and interchange authority shall follow the reliability authority’s directives to:</p> <ul style="list-style-type: none"> <li>▪ Prevent instances where interconnection reliability operating limits may be exceeded.</li> <li>▪ Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.</li> </ul>

**Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

<p align="center"><b>Policy 9 — Security Coordinator</b> <b>Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>Requirement A.1.</b> <b>Perform security analysis.</b> The RELIABILITY COORDINATORS shall ensure that next-day reliability analyses are performed simultaneously for all CONTROL AREAS and TRANSMISSION PROVIDERS in its RELIABILITY AREA to ensure that the bulk power system can be operated in anticipated normal and contingency conditions.</p>	<p>203.1.1. The reliability authority shall perform operational planning analyses to assess whether the planned bulk electric system operations within the RA’s reliability area will exceed any of its interconnection reliability operating limits.</p> <p>203.1.2. The reliability authority shall perform real-time assessments to determine if its reliability area is exceeding any interconnection reliability operating limits or is expected to exceed any interconnection reliability operating limits.</p>
<p>1.1. <b>Information sharing.</b> Each CONTROL AREA in the SECURITY AREA shall provide information required for system studies, such as critical facility status, load, generation, operating reserve projections, and known INTERCHANGE TRANSACTIONS. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection, and 1200 Pacific Standard Time for the Western Interconnection.</p>	<p>206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>▪ Balancing authority</li> <li>▪ Generator owners</li> <li>▪ Generator operators</li> <li>▪ Load-serving entities</li> <li>▪ Reliability authorities</li> <li>▪ Transmission operators</li> <li>▪ Transmission owners</li> </ul> <p><i>(Note that this data is only a subset of the data addressed in Policy 9 Requirement A.1.1.1)</i></p>

**Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

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<p><b>Requirement A.1.2.</b> <b>System Studies.</b> The RELIABILITY COORDINATORS shall conduct studies to identify potential interface and other OPERATING RELIABILITY LIMIT violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p>	<p>203.1.1. The reliability authority shall perform operational planning analyses to assess whether the planned bulk electric system operations within the RA’s reliability area will exceed any of its interconnection reliability operating limits.</p> <p>203.1.2. The reliability authority shall perform real-time assessments to determine if its reliability area is exceeding any interconnection reliability operating limits or is expected to exceed any interconnection reliability operating limits.</p>
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**Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

**Compliance With Standard**

Requirement	Functions That Must Comply With the Requirements*							
	Reliability Authority	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load-Serving Entity
201 IROL Identification	X							
202 Monitoring	X							
203 Analyses and Assessments	X							
204 Actions	X							
205 Data Specification and Collection	X							
206 Data Provision	X	X		X	X	X	X	X
207 Action Plan	X							
208 RA Directives		X	X	X				

\* Please note that this standard will apply to the existing entities (such as control areas, transmission owners, etc.) performing the functions listed above until functional certification of the RA, BA, IA, etc has been completed.

## Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits

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### *Phased-in Compliance*

The following table identifies the implementation date and the earliest compliance date for each requirement.

The implementation date is the date entities are expected to begin meeting the performance identified in this standard. Because this standard depends upon the communication of system operating limits as defined in Standard 600, “*Determine Facility Ratings, System Operating Limits and Transfer Capabilities*”, compliance to this standard will not be required until Standard 600 has been balloted and implemented. Additional time (preparation time) has been added to give entities time needed to fully comply with the requirements. Although compliance reviews will begin no sooner than six months after the implementation of Standard 600, the NERC Compliance and Certification Committee and NERC’s Director of Compliance will determine the exact timing of compliance reviews for this standard. The justification for the staggered effective dates is in the tables on the following pages:

<b>Requirement</b>	<b>Implementation Date</b>	<b>Compliance Date</b>
201 — IROL Identification	3 months from Board adoption	6 months from implementation of Standard 600
202 — Monitoring	3 months from Board adoption	6 months from implementation of Standard 60
203 — Analyses and Assessments	3 months from Board adoption	6 months from implementation of Standard 600
204 — Actions	3 months from Board adoption	6 months from implementation of Standard 600
205 — Data Specification and Collection	3 months from Board adoption	9 months from implementation of Standard 600
206 — Data Provision	3 months from Board adoption	12 months from implementation of Standard 600
207 — Action Plan	3 months from Board adoption	6 months from implementation of Standard 600
208 — Reliability Authority Directives	3 months from Board adoption	9 months from implementation of Standard 600



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<b>Requirement 201 — IROL Identification</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
201.2.1	The reliability authority shall establish a list of facilities (or groups of facilities) in the reliability authority’s reliability area that are subject to interconnection reliability operating limits.	This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy — only additional time needed would be to produce some evidence that list has been updated.
201.2.1.1	The reliability authority shall review and update the list of facilities to reflect changes in system topology.	This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy — only additional time needed would be to produce some evidence that list has been updated and this could be done in less than one week if needed.
201.2.2	The reliability authority shall establish a list of interconnection reliability operating limits for the reliability authority’s reliability area.	This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy.
201.2.2.1	The reliability authority shall identify a $T_v$ for each interconnection reliability operating limit.	Current policy has a 30-minute response time for all limits. Entities may need additional time to establish variable $T_v$ s for IROLs. This should be done within six months.
201.2.2.2	The reliability authority shall update the list of interconnection reliability operating limit values to reflect current system conditions.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to produce some evidence that the list has been updated — and this could be done in less than one week if needed.

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<b>Requirement 202 — Monitoring</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
202.2.1	The reliability authority shall have interconnection reliability operating limits available for its operations personnel’s real-time use.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to re-title the limits as IROLs.
202.2.2	The reliability authority shall have real-time data available in a form that system operators can compare to the interconnection reliability operating limits.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to let system operators know that the limits are called IROLs and may have unique T <sub>v</sub> s.
202.2.3	The reliability authority shall monitor real-time system operating parameters and compare these against its interconnection reliability operating limits.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to let system operators know that the limits are called IROLs and may have unique T <sub>v</sub> s.

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<b>Requirement 203 — Analyses and Assessments</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
203.2.1	The reliability authority shall identify operating situations or events that impact its reliability area’s ability to operate without exceeding any identified interconnection reliability operating limits.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to let system operations personnel know that the limits are called IROLs and may have unique T <sub>v</sub> s.
203.2.1.1	The reliability authority shall conduct an operational planning analysis at least once each day, evaluating the next day’s projected system operating conditions.	This should already be done to comply with existing Operating Policy — current operating practice in many locations is to do the analysis each day for the day ahead only on weekdays, and to do the ‘weekend ahead’ on Friday. Many entities do not conduct an operational planning analysis on Saturday or Sunday for Sunday and Monday. Entities may need some time to train additional personnel so that the analysis could be conducted every day of the week.
203.2.1.2	The reliability authority shall conduct a real-time assessment periodically, but at least once every 30 minutes.	This should already be done to comply with existing Operating Policy — only additional time needed would be to let system operators know that the limits are called IROLs and may have unique T <sub>v</sub> s and to identify that the assessment must be conducted at least once every 30 minutes.

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<b>Requirement 204 — Actions</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
204.2.1	The reliability authority shall document each instance where actions are taken or directives are issued to mitigate the magnitude and duration of exceeding an interconnection reliability operating limit.	This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.
204.2.1.1	The reliability authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity’s energy management system, or may be from some other source.)	This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.
204.2.2	The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than $T_v$ .	This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.
204.2.2.1	The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five business days of the initiation of the event. (The report includes the date and time of the event; identification of which interconnection reliability operating limit was violated and the $T_v$ for that limit; magnitude and duration of exceeding the interconnection reliability operating limit after exceeding $T_v$ ; actions taken or directives issued and the time these were initiated or issued; explanation of results of actions or directives.)	<p>This requires that the Compliance Enforcement Program accept the IROL Violation Report developed by the IROL Standard Drafting Team. The report collects only the information identified in the measure.</p> <p>This also requires that the RA know which entity is acting as its compliance monitor.</p> <p>This also requires that the IROL Violation Report be made available to the RAs.</p>

**Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

<b>Requirement 205 — Data Specification &amp; Collection</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
204.2.1	The reliability authority shall have a documented specification for data needed to build and maintain models needed to support real-time monitoring, operational planning analyses, and real-time assessments relative to interconnection reliability operating limits.	Many entities may not have a data specification in place. The data specification may be distributed in several other documents, and entities may need time to assemble this. Since the data needed is known, even if it is not formally documented, it should be possible to accomplish this documentation within nine months — this includes time to come to ‘mutual agreement’ with other entities.
205.2.1.1	Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.	
205.2.1.2	Specification shall address the data provision process to use when automated real-time system operating data is unavailable.	This may not exist and may need to be developed. It should be possible to develop this within the nine-month period identified for developing the complete data specification.
205.2.2	The reliability authority shall distribute its data specification to the entities that have facilities monitored by the reliability authority and to entities that provide facility status to the reliability authority.	This requires documentation that wouldn’t be available until after the data specification were completed. This should be done no later than ten months after the standard is approved — this allows nine months to develop the specification, and then a month to deliver it.
205.2.3	The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority, or an entity that provides facility status to the reliability authority, does not provide data as specified.	This requires that the data specification be developed and distributed. This should come into effect a year after the standard is approved. This allows entities some time to ‘field test’ their data specification before compliance is a factor.
205.2.3.1	The notification shall take place within five business days of discovering that the data is missing.	

**Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

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<b>Requirement 206 — Data Provision</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
206.2.1	The entity responsible shall provide data, as specified, to the requesting reliability authority, within the timeframe specified, in the mutually agreed upon format.	The data specification in requirement 205 needs to be in place before this can be implemented. There should be a 12-month delay in implementing compliance with this measure. This allows entities time to work with their RA to come to agreement with a ‘mutually acceptable format’ and gives the entities that must provide the RA with data a three month trial and error period for providing data before there is any compliance measurement.

**Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

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<b>Requirement 207 — Action Plan</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
207.2.1	The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions.	Entities should have this plan in place now. A six-month delay in compliance should allow everyone time to develop a plan if it doesn't already exist.
207.2.1.1	The action plan may be a process or procedure for preventing or mitigating instances of exceeding interconnected reliability operating limits. (Note: An emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to prevent and mitigate instances of exceeding interconnected reliability operating limits.)	

**Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits**

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<b>Requirement 208 — Reliability Authority Directives</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
208.2.1	The entity responsible shall document the following: <ul style="list-style-type: none"><li>▪ Date and time of directive received</li><li>▪ Directive issued</li><li>▪ Actions taken in response to directive</li></ul>	This should already be done and no additional time for preparation should be needed.



**Interconnection Reliability Operating Limit Violation Report  
Compliance Template**

**Entity Performing Reliability Authority Function:**

**Report Date:**

**Event Date :**

**Event Start Time:**

**Event End Time:**

**Circuit or path and value of the IROL that was exceeded:**

**The exceeded IROL's  $T_v$ :**

**Magnitude of Violation:**

**Duration of Event:**

**List of Actions Taken or Directives Issued and Results Achieved:**

<b>Time Action Initiated or Directive Issued:</b>	<b>Action Taken or Directive Issued:</b>	<b>Time Action Completed:</b>	<b>Results Achieved:</b>

**Report completed by:**

**Name:**

**Title:**

**Phone:**

## Questions & Answers About the Operate within IROLs Standard

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### Introduction to Standard

This standard requires adherence to the subset of system operating limits<sup>1</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. These limits are called interconnection reliability operating limits and are under the authority of the entity performing the reliability authority function. (Note that there are many other system operating limits that are used by system operators working for entities performing the Reliability Authority function and for entities performing the Transmission Operator function. This standard only addresses Interconnection Reliability Operating Limits.)

This standard is subdivided into eight requirements. Each of the requirements addresses some aspect of monitoring or controlling the transmission system to operate within IROLs. Some of these requirements address underlying responsibilities that must be accomplished as a prerequisite to monitoring and controlling the transmission system relative to IROLs.

201 Interconnection Reliability Operating Limit Identification — requires identification of the facilities that are subject to IROLs and requires identification of IROLs. Each IROL must have a  $T_v$ . The lists must be updated to reflect changes in topology and system conditions. (The entity performing the Reliability Authority Function is responsible for this requirement.)

202 Monitoring — requires monitoring real time data and comparing the data to IROLs to determine if the RA Area is operating within its IROLs (The entity performing the Reliability Authority Function is responsible for this requirement.)

203 Analyses and Assessments — requires that an operational planning analyses be conducted at least once each day to look at the ‘day ahead’ and requires that real-time assessments be conducted at least once every 30 minutes. These analyses and assessments are done to see if the transmission system is expected to be operated within its IROLs and to see if the transmission system is operating within its IROLs. (The entity performing the Reliability Authority Function is responsible for this requirement.)

204 Actions — requires that actions be taken or directives issued to prevent or mitigate instances of exceeding IROLs. These actions and directives must be documented when an IROL is exceeded, and when an IROL is exceeded for a time greater than the IROL’s  $T_v$  this event must be reported to the Compliance Monitor. (The entity performing the Reliability Authority Function is responsible for this requirement.)

205 Data Specification and Collection — requires that a data specification be developed that identifies the data needed for monitoring real-time parameters against IROLs, and for conducting operational planning analyses and real-time assessments relative to operating within its reliability area’s IROLs. The Data Specification must be distributed to entities that are expected to provide data and needs to address what data to provide, a mutually agreeable format for the data, a timeframe and periodicity for providing data, and must address the data provision process to use when automated real-time system operating data is unavailable. The Reliability Authority must notify its Compliance Monitor if data is not provided as specified. (The entity performing the Reliability Authority Function is responsible for this requirement.)

206 Data Provision — requires that entities provide the Reliability Authority with data needed to monitor real-time parameters against IROLs, and to conduct operational planning analyses and real-time

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<sup>1</sup> System Operating Limits are established through the standard, “Determine Facility Ratings, Operating Limits and Transfer Capabilities”

## Questions & Answers About the Operate within IROLs Standard

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assessments relative to operating within its reliability area's IROLs. (The entities performing the following Functions are responsible for this requirement: Balancing Authorities, Generator Operators, Generator Owners, Load-serving Entities, Reliability Authorities, Transmission Operators, and Transmission Owners)

207 Action Plan — requires that there be a plan to address actions to take or directions to issue to prevent and mitigate instances of exceeding IROLs. The plan must identify and be coordinated with all entities that have to take actions as part of the plan, and with entities that would be impacted by the actions taken in the plan. (The entity performing the Reliability Authority Function is responsible for this requirement.)

208 Reliability Authority Directives — requires that entities follow the Reliability Authority's directives issued to prevent or mitigate instances of exceeding IROLs. The directives issued and the actions taken in response to those directives must be documented. (The entities performing the following functions are responsible for this requirement: Balancing Authority, Interchange Authority, and Transmission Operator.)

### Expansion on Definitions

**Balancing Authority:** Integrates resource plans ahead of time, and maintains load-interchange-generation balance within its metered boundary and supports system frequency in real time.

*Note: This term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.*

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk transmission system.

*Note: This term was included in the NERC Glossary of Terms approved by the Engineering Committee and the Operating Committee in August 1996. The Glossary of Terms was prepared by the NERC Glossary of Terms Task Force.*

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

*Note: The word, 'cascading' was included in the NERC Glossary of Terms approved by the Engineering Committee and the Operating Committee in August 1996. The Glossary of Terms was prepared by the NERC Glossary of Terms Task Force.*

**Generator Operator:** Operates generating unit(s) and performs the functions of supplying energy and Interconnected Operations Services.

*Note: This is the definition proposed by the Functional Model Review Task Group for inclusion in the second version of the Functional Model.*

**Generator Owner:** The entity that owns the generator.

*Note: This is the definition proposed by the Functional Model Review Task Group for inclusion in the second version of the Functional Model.*

**Instability:** The inability of the transmission system to maintain a state of equilibrium during normal and abnormal system conditions or disturbances.

**Interconnection Reliability Operating Limit:** A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

*Note: This term was adapted from the term, Interconnection Reliability Limit, drafted by the Operating Limit Definition Task Force.*

**Interconnection Reliability Operating Limit Event:** An instance of exceeding an interconnection reliability operating limit for any length of time.

*Note: All IROL Events must be documented.*

**Interconnection Reliability Operating Limit Event Duration:** The length of time an interconnection reliability operating limit is exceeded. The duration is measured from the point where the limit is first exceeded and ends when the value drops below the limit and remains below the limit for at least 30 seconds.

*Note: Graphics in next section of this Technical Reference shows the application of this 30-second rule.*

## Questions & Answers About the Operate within IROLs Standard

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**Load-serving Entity:** Secures energy and transmission (and related generation services) to serve the end user.

*Note: This term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.*

**Occurrence period (Performance-reset Period):** The time period in which performance is measured, evaluated, and then reset.

*Note: This is a term used by the Compliance Monitors. When you look at the Sanctions Tables, note that the first table's column headings reference the number of infractions within the Performance-reset period. As the number of infractions within a performance reset period increases, so does the severity of the sanctions.*

**Operational Planning Analysis:** An analysis of the expected system conditions, given the load forecast(s) and known system constraints, such as transmission facility outages, generator outages and equipment limitations.

*Note: This standard requires that an operational planning analysis be conducted at least once each day, looking at the day ahead. This does not mean that operational planning analyses are limited to being conducted on a day-ahead basis. For example, an operational planning analysis should be conducted as part of approving a transmission line outage — and this operational planning analysis may be conducted several months ahead of the day being reviewed.*

**Real-time:** Present time as opposed to future time.

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

**Real-time Data:** Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

*Note: This definition supports the concept that monitoring is an 'active' task. The system operator assigned to monitor system conditions should be prepared to answer questions about what he/she has been monitoring without any preparation time. Simple questions can be used to determine whether or not monitoring has taken place. For example, a system operator who has been monitoring real time data to see if the area under the operator's direction is approaching or exceeding any IROLs should be able to answer the question, "Are there any IROLs on your system that have been exceeded? If any have been exceeded, are you approaching or exceeding the IROL's  $T_v$ ?"*

**Reliability Authority:** Ensures the reliability of the bulk power transmission system within its Reliability Authority Area.

*Note: This term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.*

**Reliability Authority Area:** The collection of generation, transmission, and loads within the boundaries of the Reliability Authority. Its boundary coincides with one or more Balancing Areas.

## Questions & Answers About the Operate within IROLs Standard

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*Note: This is the definition proposed by the Functional Model Review Task Group for inclusion in the second version of the Functional Model.*

**Self-certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

*Note: This is a term used by the Compliance Monitors.*

**T<sub>v</sub>:** The maximum time that an interconnection reliability operating limit can be exceeded without compliance sanctions being applied.

*Note: Operating Policy 2 — Standard A.2. included the following requirement:*

*Following a contingency or other event that results in an OPERATING SECURITY LIMIT violation, the CONTROL AREA shall return its transmission system to within OPERATING SECURITY LIMITS AS soon as possible, but no longer than 30 minutes.*

*This new standard does not require a response within 30 minutes — rather each limit has its own 'T<sub>v</sub>'. Some IROLs are so critical that exceeding them for 30 minutes may be too long — and for other IROLs, a T<sub>v</sub> greater than 30 minutes may represent an acceptable risk. While a default of 30 minutes may be easier to remember, this default may have the undesirable result of limiting the application of Market Solutions that could be used to resolve instances of exceeding IROLs.*

*See the charts in the next section for examples of how T<sub>v</sub> is used to determine whether an instance of exceeding an IROL must be reported to the Compliance Monitor.*

**Transmission Operator:** The entity that operates the transmission facilities and executes switching orders.

*Note: This term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.*

**Transmission Owner:** Owns transmission facilities.

*Note: This term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.*

**Uncontrolled Separation:** The unplanned break-up of an interconnection, or portion of an interconnection, that is not the result of automatic action by a special protection system or remedial action scheme operating correctly.

**Wide Area Impact:** The impact of an event that, if left untended, could lead to voltage instability, cascading outages or uncontrolled separation that jeopardizes the reliability of an interconnection. The geographic size of the area affected by such an event is always larger than the local area monitored by a single transmission operator and may be larger than the portion of the transmission system under the authority of a single reliability authority.

## Questions & Answers About the Operate within IROLs Standard

### Questions and Answers

#### *Who needs to comply with this standard?*

Each of the requirements in the standard assigns responsibility for that requirement to one or more 'functions.' The entities performing the listed functions are the entities that must comply with that requirement. Most of the requirements are applicable to entities that perform the Reliability Authority Function — but several functions are assigned responsibility for the Data Provision and RA Directives requirements.

Requirement	Entities that Perform these Functions Must Comply With the Requirements							
	Reliability Authority	Balancing Authority	Interchange Authority	Trans. Operator	Trans. Owner	Gen. Owner	Gen. Operator	Load-Serving Entity
201 IROL Identification	X							
202 Monitoring	X							
203 Analyses & Assessments	X							
204 Actions	X							
205 Data Specification & Collection	X							
206 Data Provision	X	X		X	X	X	X	X
207 Action Plan	X							
208 RA Directives		X	X	X				



### ***When does compliance with this standard start?***

Several things must be in place before entities are expected to come into full compliance with all of the requirements in this standard. Most importantly, the Operate Within IROLs Standard can't be implemented until after the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard has been implemented. The methodology for developing system operating limits must be in place and the RA must identify system operating limits before the RA can be held accountable for identifying which of its system operating limits are IROLs. There are other parts of the standard that will take some time to put into place if they aren't already in place. Some entities performing the RA function may have a detailed data specification that could be used to meet the Data Specification requirement in this standard — but other entities may have handled this requirement on a more casual basis and may need some time to formalize their data specifications.

### ***For a System Operator — how does this new standard differ from Operating Policy 2 — Transmission?***

There are three significant differences between what is expected of system operators under Policy 2, and what is expected of system operators under Standard 200.

#### **Major Difference #1 — Term, 'OSLs' replaced with term, 'IROLs'**

The first difference is a terminology change. The NERC Director-Compliance reports on compliance violations at each NERC Board of Trustees Meeting. He noted an increase in the number of OSL violations and was directed by the BOT to investigate the cause. The investigation results showed a widespread misunderstanding on what was/was not an OSL. The task force that worked on this problem, called the Operating Limits Definitions Task Force (OLDTF) recommended that the term, "Operating Security Limit" not be used in the future because of the widespread misunderstanding associated with this term. The new standard uses the term, 'Interconnection Reliability Operating Limit — IROL'.

From the Terms Used in the Operating Policies, here is the definition of an Operating Security Limit (OSL):

- The value of a system operating parameter (e.g. total power transfer across an interface) that satisfies the most limiting of prescribed pre- and post-contingency operating criteria as determined by equipment loading capability and acceptable stability and voltage conditions.

From the Operate within IROLs Standard, here is the definition of an Interconnection Reliability Operating Limit (IROL):

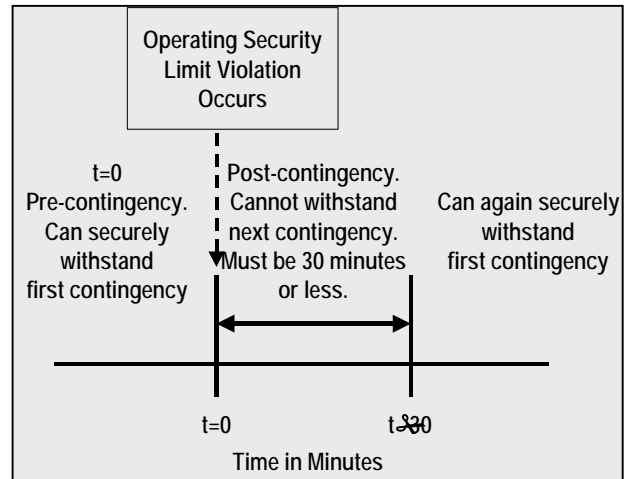
- A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.

## Questions & Answers About the Operate within IROLs Standard

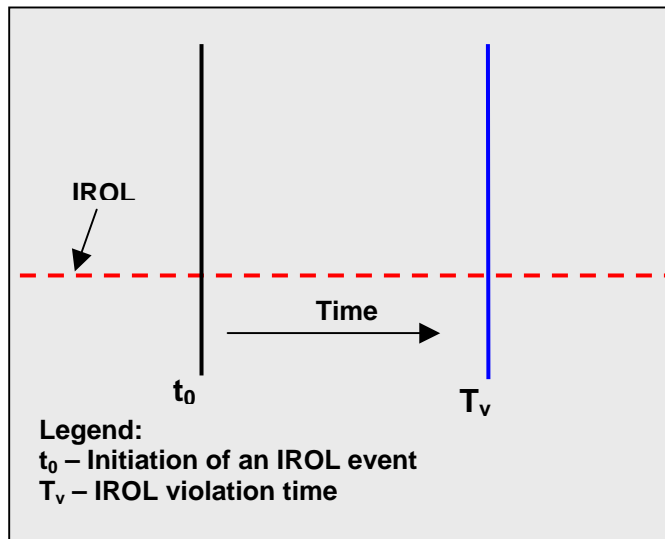
### Major Difference #2 — Resolution time changed from a uniform ‘30-minutes’ for all OSLs to a ‘unique’ $T_v$ for each IROL

Policy 2 has a standard ‘30 minute’ response time for resolving any instance of exceeding an operating security limit. The 30 minutes was established to give system operators enough time to recognize the problem and take corrective actions. The new Operate Within IROLs standard is designed from a perspective of system risk, and doesn’t have a standard ‘30 minute’ response time.

$T_v$  is the maximum amount of time the system operator has to return to a state that is at or below the limit before being subjected to compliance sanctions.  $T_v$  is based on system risk — and recognizes that some IROLs shouldn’t be exceeded for longer than 10 minutes without causing an unacceptable risk to the interconnection. Each IROL may have its own  $T_v$ .



*From Policy 2 — All OSLs addressed with the same 30-minute maximum resolution time*



← *Operate within IROLs Standard — each IROL may have its own  $T_v$ .*

*For IROLs that should never be exceeded,  $T_v$  may be zero minutes.*

### Major Difference #3 — New Report for IROL Violations

Policy 2 requires that a NERC Preliminary Disturbance Report be completed for OSL violations that exceed 30 minutes. The Preliminary Disturbance Report asks for a preliminary analysis to be conducted regarding the cause of the event — and is still needed. The new report is a compliance document and doesn’t require the same data that is required of the Preliminary Disturbance Report.

The data that is collected in the IROL Violations Report is data that should be readily available to the system operator shortly after an instance of exceeding an IROL. The report doesn’t ask for an analysis, just for a collection of the facts such as what limit was exceeded, how long was it exceeded, etc. The new report must be filed with the compliance monitor within five days of the event.

### ***What is an IROL?***

An IROL is a special type of system operating limit. While operating so that system operating limits aren't exceeded is always important, if an IROL is exceeded, there is an increased risk of voltage instability, cascading outages or uncontrolled separation that adversely impacts the interconnection.

System Operating Limits are monitored by system operators working for entities performing the Transmission Operator function and may also be monitored by system operators working for entities performing the Reliability Authority function.

The Reliability Authority monitors IROLs. The Reliability Authority may delegate this responsibility to system operators working for entities performing the Transmission Operator function, but it is the Reliability Authority that is held accountable for ensuring that IROLs aren't exceeded.

### ***What is the IROL's $T_v$ ?***

$T_v$  is the maximum amount of time the system operator has to return to a state that is at or below the limit before being subjected to compliance sanctions.

The  $T_v$  associated with each IROL is a time value used to assess how quickly the interconnection may deteriorate if an IROL isn't mitigated. IROLs should never be exceeded — but if one is exceeded, the  $T_v$  represents the maximum amount of time the limit can be exceeded before the risk to the interconnection becomes unacceptable. Under this standard, if a  $T_v$  is exceeded, there are financial penalties and additional reporting requirements.

### ***Why don't all IROL's have the same $T_v$ ?***

The IROL's  $T_v$  is based on system risk — and recognizes that exceeding some IROLs is unacceptable for any length of time; while exceeding other IROLs can probably be tolerated for a longer period of time before there is an unacceptable risk to the interconnection. By establishing a  $T_v$  for each IROL, the RA has information needed to anticipate the negative results of exceeding an IROL. If an IROL can't be exceeded for any length of time, then the RA may choose to install a special protection scheme to control the risk of exceeding the limit in real time.

### ***If an RA installs a special protection scheme to reduce the probability of exceeding an IROL for time greater than the limit's $T_v$ , does this eliminate the IROL?***

No. The facility being protected by the special protection scheme would still need to be included in the list of facilities subject to IROLs, and the IROL would need to be listed with its  $T_v$ . Since special protection schemes don't always work as planned, it is important that system operators know where they have IROLs, know which facilities are subject to IROLs and know what the  $T_v$  is for each IROL. The system operator needs access to this data to make appropriate system operating decisions when special protection schemes don't work as planned.

### ***How do you develop a list of IROL's?***

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard includes a requirement that entities responsible for developing system operating limits document their methodology for developing these limits. The RA is responsible for developing the subset of system operating limits that are called IROLs. The RA must follow its methodology for developing system operating limits and then must identify whether or not exceeding that limit could cause voltage instability, cascading outages,

## Questions & Answers About the Operate within IROLs Standard

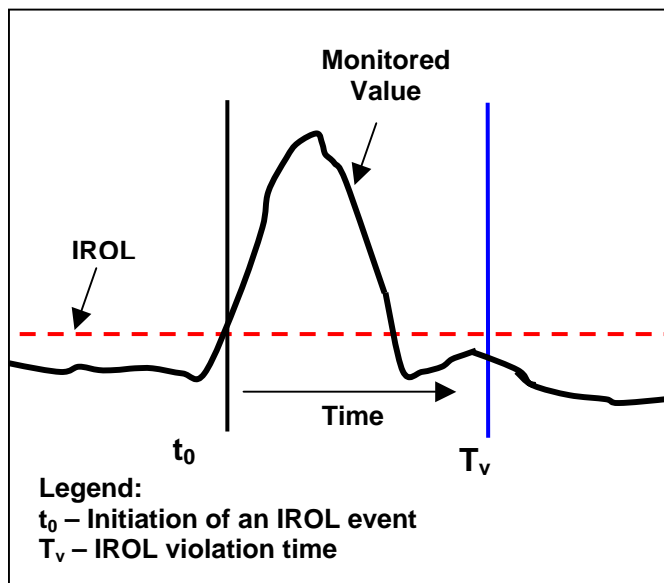
or uncontrolled separation from the interconnected transmission system. If the system operating limit could lead to one or more of these dire consequences, then the limit is an IROL.

### **How do you establish a $T_v$ for an IROL?**

Each RA may use whatever system it wants for establishing a  $T_v$  for its IROLs. This gives each RA the latitude to be as conservative as it desires. Some RAs may choose to use a default  $T_v$  of 30 minutes — currently some entities have a default of 20 minutes for all limits that would be categorized as IROLs. One of the benefits of this variable  $T_v$  is that it gives an RA that operates in a market environment greater flexibility before implementing remedial actions that have the effect of negatively impacting that market.

### **Which instances of exceeding an IROL need to be documented?**

All. Every instance of exceeding an IROL for any length of time must be documented. Most entities are expected to document the instance on a system operating log, but the standard does not require that the documentation be on an operating log, just that it be documented somewhere.



### **When you exceed an IROL, what do you have to document?**

When you exceed an IROL for any length of time, you need to document the following three things:

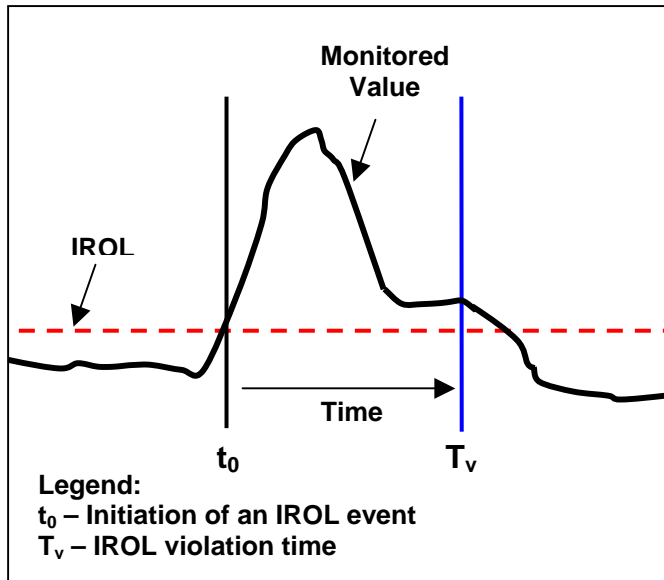
- Actions taken or directives issued
- Magnitude of the event
- Duration of the event

### **Does the standard require that exceeding an IROL be documented on the system operator's daily log?**

No. Each entity can document IROL events using whatever documentation system works best for them. While each entity may use whatever system(s) it chooses to document instances of exceeding IROLs, the documentation must be retrievable so it can be shown to the compliance monitor. The data can be retrievable through computer screen displays, through paper or electronic logs, or other sources.

### ***Which instances of exceeding an IROL need to be reported?***

Every instance of exceeding an IROL for time greater than the IROL's  $T_v$  is reported to the compliance monitor within five business days.



*The value being monitored exceeded its IROL for a time greater than the IROL's  $T_v$  and the event must be documented and reported.*

### ***When you exceed an IROL for a time greater than the IROL's $T_v$ , what do you have to report?***

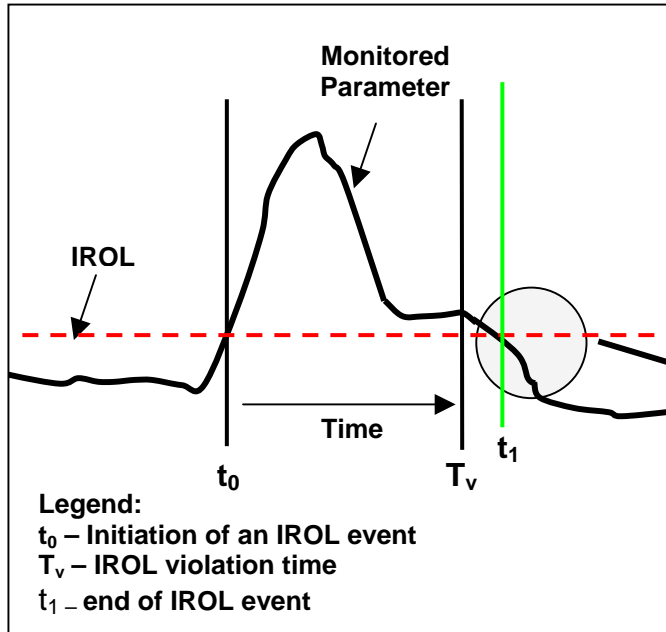
When you exceed an IROL for a time greater than the IROL's  $T_v$ , you have to report the following information to the compliance monitor:

- Date and time of the event
- Identification of which interconnection reliability operating limit was violated
- $T_v$  for that limit
- Magnitude and duration of exceeding the interconnection reliability operating limit
- Actions taken or directives issued
- Time actions or directives were initiated or issued
- Explanation of results of actions or directives

There is a report called the IROL Violation Report that captures this information. This report is available from the NERC website and is provided at the end of this document.

**How do you calculate the duration of an IROL event?**

The duration of an IROL event is measured from the point in time when the IROL is first exceeded to the point in time where the parameter being monitored has returned to a value that is at or below the IROL. The event concludes when the actual value is below the IROL for 30 seconds.

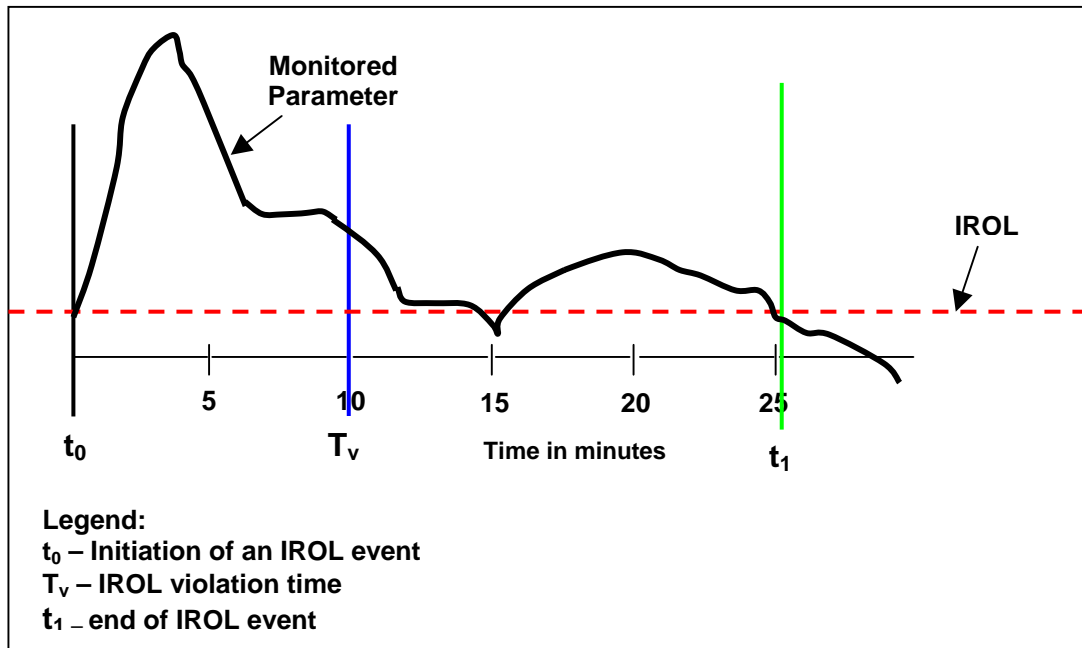


The monitored parameter must remain at or below the IROL for 30 seconds or more.

The line for  $t_1$  shows the end of the IROL event, which is the point in time when the monitored value returns to a value that is at or below the IROL as long as the monitored value remains at or below the limit for at least 30 seconds. (From pt. A to pt. B is 30 seconds.)

The following example is shown in the chart below. The IROL that has been exceeded has a  $T_v$  of 10 minutes. The IROL is exceeded for 15 minutes, then the monitored value returns to a value that is below that IROL for just 20 seconds, then exceed the IROL for another 10 minutes — then returns to a value that is below the IROL for 2 hours, the duration of the event that must be reported is:

- 25 minutes, 20 seconds



**IROL Violation Report**

Interconnection Reliability Operating Limit Violation Report Compliance Template			
<b>Entity Performing Reliability Authority Function:</b>			
<b>Report Date:</b>			
<b>Event Date:</b>	<b>Event Start Time:</b>	<b>Event End Time:</b>	
<b>Name of IROL that was exceeded:</b>	<b>Value of the IROL that was exceeded:</b>	<b>The exceeded IROL's T<sub>v</sub>:</b>	
<b>Magnitude of Limit Exceeded after T<sub>v</sub>:</b>		<b>Duration of Event:</b>	
<b>List of Actions Taken or Directives Issued and Results Achieved:</b>			
Time Action Initiated or Directive Issued:	Action Taken or Directive Issued:	Time Action Completed:	Results Achieved:
<b>Report completed by:</b>			
<b>Name:</b>		<b>Phone:</b>	
<b>Title: _____</b>		<b>E-mail:</b>	

**Responses to comments submitted during the balloting of the Monitor and Assess short-term Transmission Reliability, Operate within Interconnection Reliability Operating Limits standard**

The Operate within Limits Standard Drafting Team thanks all those who submitted comments with their ballots on the recent posting of this standard. After careful review and consideration of all comments received, the drafting team has modified the standard and is re-posting the standard for another 45-day comment period.

**The SDT's most significant changes include the following:**

- Clarified the definitions of 'widespread impact,' 'cascading outages' and 'bulk electric system' so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can't exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act 'without delay' to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

**Changes outside the Scope of the SDT:**

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT. These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits – not just those that could cause instability, cascading outages or uncontrolled separation

**Consideration of Comments:**

The SDT provided a response to each comment that was submitted with a ballot. These comments can be reviewed at the following site:

<http://www.nerc.com/~filez/standards/IROL.html>



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## Definitions

### **T<sub>v</sub>**

T<sub>v</sub>: The maximum time that an Interconnection Reliability Operating Limit can be exceeded ~~without compliance sanctions being applied~~ before the risk to the interconnection becomes greater than acceptable. T<sub>v</sub> may not be greater than 30 minutes.

#### **Summary Consideration:**

Several balloters indicated a preference for a definition that references risk to the interconnection rather than compliance sanctions. In other comments, many balloters indicated a preference for setting a maximum value for T<sub>v</sub> of 30 minutes. The definition has been revised as follows:

#### **Entergy EES (Transmission Owners)**

DEFINITION OF T<sub>v</sub> - The Transmission Owner has fiduciary responsibility for his owned facilities. Therefore he has ultimate responsibility and liability for owning, maintaining and operating his facilities to protect his stockholders' and lending institutions' investments. The Transmission Owner then is ultimately responsible for establishing system operating limits, including T<sub>v</sub>, for his facilities.

By definition, a system violating an IROL, and in the T<sub>v</sub> period, is operating in a critical operating state and is probably violating equipment limits set by the Transmission Owner.

Also, the value of T<sub>v</sub> could be specified in terms of hours instead of minutes because this standard does not specify a maximum value for T<sub>v</sub>. The system violating an IROL should be brought out of that critical operating state as soon as possible. We therefore suggest T<sub>v</sub> be capped at 30 minutes to avoid operating in a critical state for long periods of time.

Therefore, the definition of T<sub>v</sub> should be revised to:

"T<sub>v</sub>: The maximum time that an Interconnection Reliability Operating Limit, as determined by the Transmission Owner for equipment-based limits and by the Reliability Authority and Planning Authority for system-based limits, can be exceeded without compliance sanctions being applied. The maximum time any IROL may be exceeded is 30 minutes unless an alternative value can be shown to be more appropriate."

The Transmission Owner is responsible for establishing facility ratings for its equipment. The Transmission Owner's facility ratings must be respected by the entities that develop associated system operating limits and Interconnection Reliability Operating Limits. The new standards being developed by NERC are being developed in support of the terminology and concepts in the Functional Model. The Functional Model assigns the Reliability Authority the responsibility for identifying IROLs. To clarify that the Transmission Owner's facility ratings must be respected, this standard has been revised to include a statement indicating that the IROLs are developed from SOLs that are developed according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.

There were many industry balloters who indicated a desire to set T<sub>v</sub> at a maximum of 30 minutes, and this change has been implemented.

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

**Florida Power & Light FPL**

**FRCC**

**JEA JEA (Transmission Owners)**

**Reedy Creek Improvement District RC (LSEs)**

**Reedy Creek Improvement District RC (TDUs)**

**Reedy Creek Improvement District RC (Generators)**

**Reedy Creek Improvement District Marketing RCM (Brokers)**

**Seminole Electric Cooperative SEC (TDUs)**

**Seminole Electric Cooperative SEC (Generators)**

**Seminole Electric Cooperative SEC (Brokers)**

**Kissimmee Utility Authority**

**Orlando Utilities Commission OUCT**

**Tampa Electric Company TEC (LSEs)**

**Tampa Electric Company TEC (Brokers)**

It is unclear if an IROL event would be pre-contingency or post-contingency. This question was raised on the web cast, and it sounded like the answer was that the IROL events were all “real-time”. Should  $T_v$  be 0 for a real-time event and something greater than 0 for a pre-contingency event? The definition of  $T_v$  states that it is the maximum time the system operator has to return to a state that is at or below the limit before being subjected to compliance sanctions. This is an inadequate definition.  $T_v$  should not be based on when compliance sanctions begin, but rather on the time the RA is willing to risk the system. This also depends whether it is pre or post contingency. It is clear that more work needs to be done in clarifying this definition.

The definition of  $T_v$  has been revised. IROL's are based on system operating limits that are developed based on study criteria identified in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. IROLs are expected to be updated to match changing system conditions. IROLs are developed based on studies of pre-contingency situations and are updated in real time to address changes in system topology such as a loss of a line or a unit trip

**Gainesville Regional Utilities GVL (LSEs)**

**City of Tallahassee TAL (Transmission Owners)**

The IROL  $T_v$  continues to be an area of confusion.  $T_v$  is the maximum amount of time the system operator has to return to a state that is at or below the limit before being subjected to compliance sanctions. This does not help anyone figure out how to determine  $T_v$ . It should be based on how much time before the risk is too great.

- How is the IROL  $T_v$  calculated? If it is pre-contingency, it is really how long the RA is willing to take the risk of the contingency.
- Does the calculation of  $T_v$  depend on the tool used to determine the IROL?
- Would  $T_v$  be 0 for a real-time event and  $T_v$  be something greater for a pre-contingency event?
- Should  $T_v$  have a maximum, for example 30 minutes?

Each RA needs to determine  $T_v$  using methodology that is reasonable for that system.  $T_v$  is intended to be risk-based and the definition of  $T_v$  has been revised to make this clarification.

**T<sub>v</sub> doesn't depend on the tool used to determine the IROL.**

**T<sub>v</sub> can be between 0 and 30 minutes for any IROL.**

**The balloters overwhelmingly asked for a maximum T<sub>v</sub> of 30 minutes, and this change has been implemented.**

**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

Standard 200 requires criteria to be defined for the determination of T<sub>v</sub> as a reporting benchmark – inviting misuse of the quantity. As defined in the Standard definition section, T<sub>v</sub> does not appear to relate to the risk in the system, the responsiveness of the operators, the complexity of restoration procedures except in a vague sense that T<sub>v</sub> is likely too long to wait before a return below the limit. This simplistic definition is very different than the one provided in page 9 of the question and answers document issued with the Standard which states “T<sub>v</sub> is based on system risk.” Therefore this definition should be revised to reflect that T<sub>v</sub> should be based on the potential risk to the system of not taking corrective action in a time frame less than defined by T<sub>v</sub>. This wording should also be included in section 201a.2.i of the Standard. This definition would be similar to the rationale for the 30 minute limit defined for OSL.

**Several balloters indicated a preference for a definition that references risk to the interconnection rather than compliance sanctions. The definition has been revised to reflect this preference.**

**Gainsville Regional Utilities GVL (LSEs)**

**City of Tallahassee TAL (Transmission Owners)**

T<sub>v</sub>: The maximum time that an Interconnection Reliability Operating Limit can be exceeded without compliance sanctions being applied. Shouldn't the time be based upon the time before the system is in jeopardy rather than when a sanction is applied for non-compliance? This definition would not help the RA determine what T<sub>v</sub> should be.

**Several balloters indicated a preference for a definition that references risk to the interconnection rather than compliance sanctions. The definition has been revised to reflect this preference.**

**City of Tallahassee TAL (Generators)**

The definition of T<sub>v</sub> in the standard does not match the intent explained in the Q&A document. By the Q&A document it includes “unacceptable” risk, shouldn't that be in the definition? “The maximum amount of time that an IROL can be exceeded without the risk to the interconnection becoming unacceptable”? IROL violations that persist for longer than T<sub>v</sub> will result in a sanction.

**Several balloters indicated a preference for a definition that references risk to the interconnection rather than compliance sanctions. The definition has been revised to reflect this preference.**

## Operational Planning Analysis

### Summary Consideration:

Several commenters provided suggestions for improvements to the definition of Operational Planning Analysis. The definition was revised as follows:

**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as; given the load forecast(s), generation output levels and known system constraints, some examples being (transmission facility outages, generator outages, and equipment limitations,

### American Transmission Company LLC ATC

#### MAIN

The definition of "Operational Planning Analysis" refers to "expected system conditions." The use of the word "expected" leaves too much room for interpretation about which contingencies, if any, must be included in the planning analysis.

Because each RA's system is different, there may be different considerations for each RA's expected system conditions.

### Entergy EES (Transmission Owners)

DEFINITION OF OPERATIONAL PLANNING ANALYSIS - Operational Planning Analysis does not address the time frame of the analysis, which as contained in the draft could inappropriately be extended to years. Operational Planning Analyses are typically conducted for the next day's operation and up to 13 months. Therefore, this definition needs to be changed to "An analysis of the expected system conditions for the next day's operation and up to 13 months ahead of expected conditions, given the load forecast(s), ..."

The definition has been revised to support the concept of your recommendation but because the Functional Model uses 12 months as the suggested dividing line between operational planning and long-range planning, the revised definition of operational planning uses the phrase, 'up to 12 months ahead.'

### Action Plan

Bonneville Power Administration Transmission BPAT

- 1) "Action Plan" should be defined in the "Definition" section of the Standard.

The standard has been revised to replace the phrase, 'action plan' with the terms, 'procedures, processes or plans'. These new terms have been used to conform with the terminology used in the Coordinate Operations standard. These terms are defined in the Coordinate Operations standard.

## IROL

### Summary Consideration:

The definition was revised to replace the phrase, 'bulk transmission system' with the phrase, 'bulk electric system.' This change was made because 'bulk electric system is already a defined term.

**Interconnection Reliability Operating Limit:** A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk ~~transmission~~ electric system.

### Gainesville Regional Utilities GVL (LSEs)

#### City of Tallahassee TAL (Transmission Owners)

Interconnection Reliability Operating Limit: A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. Is the definition for cascading outages provided above good enough to determine an IROL?

The definition of cascading outages has been revised as follows:

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location- which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

The revised definition should help RAs determine which SOLs are IROLs. The definition of wide area impact has also been revised to try and assist in clarifying which SOLs are IROLs. However the term, 'wide area impact' is not included in this standard and the SDT is removing it from the list of terms to be approved with this standard.

### Dairyland Power Cooperative DPC

The definition of "Interconnection Reliability Operating Limit" implies that it is acceptable to operate over established limits if it would not cause cascading. Concern that this could result in a degradation of reliability.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.



**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

There is a fundamental disconnect between standard 600 regarding the development of limits (such as System operating Limits) and the limits (IROL's) required to implement this standard. Until this disconnect is resolved or this standard is revised to deal explicitly with the development of IROL's, it is not appropriate for standard 200 to be in place. Standard 600 specifies that SOLs are to be developed as first contingency limits that ensure that all underlying limits (such as voltage, flow or stability) are not violated. IROLs are defined as SOLs which if exceeded could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk electric system. Based on standard 600, violation of most SOLs will not lead to instability, uncontrolled separation or cascading outages. For most regions only a small subset of SOLs are likely to be IROLs. Many tightly interconnected regions will not have IROLs at all for first contingency. The only time that most SOLs could conceivably be classified as IROLs would be for deliberate disregard of the limits, multiple simultaneous contingencies or a system condition which is not consistent with the study assumptions used to define the limits (as might happen if other system operating limit violations are ignored). Therefore it is unlikely that monitoring only IROLs will be an effective way to prevent instability, uncontrolled separation, or cascading outages of the bulk electric system.

The scope of this standard was limited to the subset of SOLs that are IROLs. As envisioned, there are relatively few IROLs, and many, many SOLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Midwest Independent Transmission System Operator, Inc.**

There is still is not a common understanding of an Interconnected Reliability Limit (IRL).

This standard addresses IROLs, which are a bit different from the IRLs being field-tested by the NERC Operating Limits Definition Task Force. The definitions of cascading outages and wide area impact have been revised, and these revisions should help in the understanding of what is/is not an IROL.

**WECC**

**Minnesota Power MP**

**Public Works Commission Fayetteville PWCF**

**Southern California Edison SCET**

**Salt River Project SRP**

**Tucson Electric Power Company TEPC**

**Platte River Power Authority TP PRPA**

The definition of Interconnection Reliability Operating Limit includes the following statement --- "A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system." This seems to imply that it is OK to operate over the established limit if it would not cause cascading, even

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Definitions**

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though it could result in damaging equipment, loss of load, or overloads on another entity’s facilities. We believe that implying that limits are only exceeded if the violation could lead to “instability, uncontrolled separation, or cascading outages” will lead to a degradation of system reliability. For example, a system operator may conclude that it is acceptable to violate an operating limit as long as the consequences are not a cascading outage. This philosophy is not acceptable.

The scope of this standard was limited to the subset of SOLs that are IROLs. As envisioned, there are relatively few IROLs, and many, many SOLs. The SDT recognizes that exceeding any SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Power Pool of Alberta PPOA**

Standard 200 needs enhanced definitions of IROL and wide area impact, in order to more precisely define the portions of power systems that IROLs are meant to protect. At a minimum there should be recognition of the need for adjacent Reliability Authorities to reach a common understanding of wide area impact.

The definitions of IROL and Wide Area Impact have both been revised to improve their understanding. Note that the term, “wide area impact” was not used in this standard. Although the SDT continues to try and help the industry reach consensus on a definition of this term, the term will be removed from the list of terms associated with this standard.

**Cascading Outages**

**Summary Consideration:** There were several comments indicating that the definition of cascading outages be refined to match the definition that had been contained within the NERC Glossary. The definition contained within the NERC Glossary reads as follows:

**Cascading**

The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies

Because the industry hasn’t been able to agree on a definition of ‘widespread’ and the suggested addition uses the phrase, ‘widespread’, the SDT declined to revise the definition of cascading to exactly match the definition in the NERC Glossary. The SDT replaced the phrase, ‘widespread’ with the Department of Energy’s threshold for reporting system outages through Report 417. The revised definition reads as follows:

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location, which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**Bonneville Power Administration Transmission BPAT**

Definition of Cascading outages does not match existing definition that was laboriously reviewed within NERC (the last sentence of the old definition was not included here). The widespread component of cascading in the original definition is important – some local cascading could be acceptable and must be preserved.

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Definitions**

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Because the industry hasn't been able to agree on a definition of 'widespread' and the suggested addition uses the phrase, 'widespread', the SDT declined to revise the definition of cascading to exactly match the definition in the NERC Glossary. The SDT replaced the phrase, 'widespread' with the Department of Energy's threshold for reporting system outages through Report 417. The revised definition reads as follows:

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location- which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**WECC**

**Minnesota Power MP**

**Public Works Commission Fayetteville PWCF**

**Southern California Edison SCET**

**Salt River Project SRP**

**Tucson Electric Power Company TEPC**

**Platte River Power Authority TP PRPA**

**California Energy Commission**

The definition of "cascading" is inconsistent with NERC definitions found elsewhere. The definition of "wide area impact" is overly broad, stating the area affected is "always larger than the local area monitored by a single transmission operator." By this definition, the affected area could be large (such as a major metropolitan area or multi-state RTO) and still not be considered a "wide area impact."

Because the industry hasn't been able to agree on a definition of 'widespread' and the suggested addition uses the phrase, 'widespread', the SDT declined to revise the definition of cascading to exactly match the definition in the NERC Glossary. The SDT replaced the phrase, 'widespread' with the Department of Energy's threshold for reporting system outages through Report 417. The revised definition reads as follows:

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location- which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**Gainesville Regional Utilities GVL (LSEs)**

**City of Tallahassee TAL (Transmission Owners)**

Cascading Outages: The uncontrolled successive loss of system elements triggered by an incident at any location. There are more words in the definition provided in the Q&A documents. Is this definition good enough? Does it need to impact more than one system?

Because the industry hasn't been able to agree on a definition of 'widespread' and the suggested addition uses the phrase, 'widespread', the SDT declined to revise the definition of cascading to

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location- which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**Responses to Operate within IROLS Standard Ballot**  
**Comments on Definitions**

---

exactly match the definition in the NERC Glossary. The SDT replaced the phrase, ‘widespread’ with the Department of Energy’s threshold for reporting system outages through Report 417. The revised definition reads as follows:

**Occurrence Period**

**Summary Consideration:**

The definition of Occurrence Period has been separated from the definition of Performance-reset Period.

~~Occurrence Period (Performance-reset Period):~~ The time period that the entity being assessed must operate without any violations to reset the level of non-compliance to zero.

**Occurrence Period:** The time period in which performance is measured and evaluated.

**Bonneville Power Administration Transmission BPAT**

The “Definitions” Section defines the “Occurrence Period (Performance-reset Period)” as “the time period in which performance is measured, evaluated, and then reset”. The “Performance-reset Period” for each of the requirements in this Standard is 12 months and the maximum “Number of Violations in Occurrence Period at a Given Level” is “4 or more”.

We recommend that the definition of “Occurrence Period” not be included in the definition of the “Performance-reset Period” but be defined on its own so that the Standard and the Compliance Sanction Table are understandable.

We recommend that the compliance processes be defined in a Compliance Standard instead of each separate standard.

The terms defined in this standard were included at the request of industry commenters. While the occurrence period is sometimes the same as the ‘Performance-reset period, they do not always have to be the same. The definitions have been revised as follows:

**System Operating Parameters**

**Bonneville Power Administration Transmission BPAT**

In Section 202(b)(3), the standard indicates that the RA shall monitor “system operating parameters” which is an undefined term. It is unclear why the RA would need any information not included in the IROL to monitor the system. More explanation of what system operating parameters include is needed and how this information is different from the information in the IROL. It is recommended that “System Operating Parameters” be defined in the “Definition” section of the Standard and that it include something similar to “variables that impact the IROL”.

If the SDT defines system operating parameters, then readers may interpret the requirement to mean that IROLS should be limited to the listed parameters, and this isn’t the intent. The standard only addresses the system operating parameters associated with the IROLS.

## **Bulk Electric System**

### **Summary Consideration:**

The definition of Bulk Electric System that was posted with the standard for ballot, was the same definition that was included in the NERC Glossary of Terms, approved by the Engineering and Operating Committees in 1996. At the request of several balloters, the definition has been refined as follows:

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC.).

### **City of Lakeland PLKT**

Better definition of Bulk Electric System is needed.

At the request of several balloters, the definition has been refined to indicate that it is limited to voltages higher than 35 kV or as approved in a tariff filed with FERC.

### **City of Lakeland PLKT**

Some definitions are vague and somewhat circular. Wide Area Impact seems to be same as IROL, lack of clarity on scope of area for cascading outages, ie; single control area or RA's area or beyond ? Possible confusion with Wide Area Impact. Bulk Electric System definition ?

The definition of Bulk Electric System that was posted with the standard for ballot, was the same definition that was included in the NERC Glossary of Terms, approved by the Engineering and Operating Committees in 1996. At the request of several balloters, the definition has been refined to indicate that it is limited to voltages higher than 35 kV or as approved in a tariff filed with FERC.

### **Carolina Power & Light Company CPL (Transmission Owners)**

#### **Carolina Power & Light Company CPL (LSEs)**

#### **Carolina Power & Light Company CPL (Generators)**

The definition of Bulk Electric System is circular and does not help anyone understand what is the Bulk Electric System. In fact, the interim blackout report has a definition that is more specific, but we are not even sure if that is the definition that has been used in other NERC policies and standards. The definition of Wide Area Impact is really the same as the definition of IROL. This definition does not help anyone understand what a wide area really is either.

The definition of Bulk Electric System that was posted with the standard for ballot, was the same definition that was included in the NERC Glossary of Terms, approved by the Engineering and Operating Committees in 1996. At the request of several balloters, the definition has been refined to indicate that it is limited to voltages higher than 35 kV or as approved in a tariff filed with FERC.

The SDT searched the Interim Blackout Report (page 117) and found that the Report used exactly the same definition for Bulk Electric System that was used with the version of this standard posted for ballot.

### **Florida Power & Light FPL**

#### **FRCC**

JEA JEA (Transmission Owners)  
Kissimmee Utility Authority  
Orlando Utilities Commission OUCT  
Reedy Creek Improvement District RC (LSEs)  
Reedy Creek Improvement District RC (TDUs)  
Reedy Creek Improvement District RC (Generators)  
Reedy Creek Improvement District Marketing RCM (Brokers)  
Seminole Electric Cooperative SEC (TDUs)  
Seminole Electric Cooperative SEC (Generators)  
Seminole Electric Cooperative SEC (Brokers)  
Tampa Electric Company TEC (LSEs)  
Tampa Electric Company TEC (Brokers)

The definition of Bulk Electric System is circular and does not help anyone understand what is the Bulk Electric System. In fact, the interim blackout report has a definition that is more specific, but we are not even sure if that is the definition that has been used in other NERC policies and standards.

The definition of Bulk Electric System that was posted with the standard for ballot, was the same definition that was included in the NERC Glossary of Terms, approved by the Engineering and Operating Committees in 1996. At the request of several balloters, the definition has been refined to indicate that it is limited to voltages higher than 35 kV or as approved in a tariff filed with FERC.

The SDT searched the Interim Blackout Report (page 117) and found that the Report used exactly the same definition for Bulk Electric System that was used with the version of this standard posted for ballot.

### **Wide Area Impact**

The impact of ~~an event~~ a single incident resulting in uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes. ~~that, if left untended, could lead to voltage instability, cascading outages or uncontrolled separation that jeopardizes the reliability of an interconnection. The geographic size of the area affected by such an event is always larger than the local area monitored by a single transmission operator and may also be larger than a single Reliability Authority's area.~~

#### **Summary Consideration:**

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The Functional Model Review Task Group has declined to develop a definition, and the Operate in Limits Definition Task Force has not been successful in reaching a concise definition. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard. The SDT revised the definition to conform to the Department of Energy threshold for reporting disturbances as defined in DOE Form EIA-417. The DOE Form EIA-417 uses the following criteria for reporting disturbances:

"Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident"

**City of Lakeland PLKT**

Better definition of Wide Area Impact is needed.

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard.

**City of Lakeland PLKT**

Some definitions are vague and somewhat circular. Wide Area Impact seems to be same as IROL, lack of clarity on scope of area for cascading outages, ie; single control area or RA's area or beyond ? Possible confusion with Wide Area Impact . Bulk Electric System definition?

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard.

**Duke Power DUKE (Electric Generators)**

**Duke Power DUKE (LSEs)**

**Duke Power DUKE (Transmission Owners)**

The definition of "wide area" is still being developed. Industry needs to reach consensus definition of this term prior to its being utilized in a Standard.

Recommend that this definition be completed prior to being used in a Standard.

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard.

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

The definition of Bulk Electric System is circular and does not help anyone understand what is the Bulk Electric System. In fact, the interim blackout report has a definition that is more specific, but we are not even sure if that is the definition that has been used in other NERC policies and standards. The definition of Wide Area Impact is really the same as the definition of IROL. This definition does not help anyone understand what a wide area really is either.

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard.

**ISO New England Inc ISNE**

The Standard does not include clear definitions or criteria on how "local" and "Wide Area Impact" are determined. Therefore, it is difficult to assess what electrical boundaries an IROL is meant to protect. This definition of Wide Area Impact points out that the electrical area to be included in the limit may be larger than the portion of the transmission system under the authority of a single Reliability Authority (RA). This indicates the need for studies and associated limits that transcend the boundaries of a single RA's purview, yet there is no formal statement identifying this need in standard, 200, 600 or the Co-ordinate Operations Standard (currently under development).

The SDT did not use the terms, 'wide area impact' or 'local area' in this standard. There is no industry consensus on the definition of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

### **Electricity Consumers Resource Council**

We are concerned that the definition or criteria regarding the differentiation between "Local" and "Wide Area Impact" is unclear. The proposed standard does not appear to provide adequate responses if the electric area to be included in the limit is larger than the portion of the transmission system under the authority of a single Reliability Authority (RA). The standard should clearly explain how an RA can order all TO's, BA's, IA's and other RA's to take necessary actions if they are not within the controlling RA's reliability area.

The SDT did not use the terms, 'wide area impact' or 'local area' in this standard. There is no industry consensus on the definition of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The Coordinate Operations standard addresses the coordination of actions between two RAs. There is a requirement in this standard that requires the entities that work under the direction of an RA to follow that RA's directives. RA Certification is expected to include requirements that the RA have written agreements with all entities that operate within its physical and/or electrical boundaries. These agreements are expected to address the authority of the RA to direct entities to take actions under normal and abnormal conditions.

### **Exelon Energy Delivery EED - PECO & ComEd (LSEs)**

#### **Exelon Generation Company LLC EXGN**

Exelon believes that the definition of "Wide Area Impact" is incorrect. The second sentence of the definition states, "The geographic size of the area affected by such an event is always larger than a single Reliability Authority's area". This implies that a blackout confined to a major city monitored by a single transmission operator is not a violation of this Standard. Such an event not being a violation of this standard could lead to the conclusion that this Standard is not accomplishing its objective. Exelon suggests that the second sentence be removed.

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard.

### **MAIN**

We believe that the definition of "Wide Area Impact" is incorrect. The second sentence of the definition states, "The geographic size of the area affected by such an event is always larger than the local area monitored by a single transmission operator and may also be larger than a single Reliability Authority's area". This implies that a blackout confined to a major city monitored by a single transmission operator is not a violation of this standard. Such an event not being a violation of this standard could lead to the conclusion that this standard is not accomplishing its objective. We suggest the second sentence be removed.

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard.



**Responses to Operate within IROLs Standard Ballot**  
**Comments on Definitions**

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The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**FirstEnergy Corp**

It is difficult to establish what areas, or electrical boundaries, are to be protected. The standard does not give clear definition on how local or wide area impacts are determined.

IROL's are based on system operating limits that are developed based on study criteria identified in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. IROLs are expected to be updated to match changing system conditions. . Each RA is expected to study its SOLs to determine which ones could lead to voltage instability, cascading outages or uncontrolled separation. IROLs are developed based on studies of pre- contingency situations and are updated in real time to address changes in system topology such as a loss of a line or a unit trip

Note that the SDT did not use the terms, 'wide area impact' and 'local impact' in this standard. There is no industry consensus on the definitions of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

**Florida Power & Light FPL**

**FRCC**

**JEA JEA (Transmission Owners)**

**Kissimmee Utility Authority**

**Orlando Utilities Commission OUCT**

**Reedy Creek Improvement District RC (LSEs)**

**Reedy Creek Improvement District RC (TDUs)**

**Reedy Creek Improvement District RC (Generators)**

**Reedy Creek Improvement District Marketing RCM (Brokers)**

**Seminole Electric Cooperative SEC (TDUs)**

**Seminole Electric Cooperative SEC (Generators)**

**Seminole Electric Cooperative SEC (Brokers)**

**Tampa Electric Company TEC (LSEs)**

**Tampa Electric Company TEC (Brokers)**

The definition of Wide Area Impact is really the same as the definition of IROL. This definition does not help anyone understand what a wide area really is either.

The SDT did not use the term, 'wide area impact' in this standard. There is no industry consensus on the definition of this term. The SDT will request that this term continue to be refined, but recommends that this refinement take place outside the scope of this standard.

**Hydro-Quebec HQT**

The Standard does not include clear definitions or criteria on how "local" and "Wide Area Impact" are determined. Therefore, it is difficult to assess what electrical boundaries an IROL is meant to protect. This definition of Wide Area Impact points out that the electrical area to be included in the limit may be larger than the portion of the transmission system under the authority

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Definitions**

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of a single Reliability Authority (RA). This indicates the need for studies and associated limits that transcend the boundaries of a single RA's purview, yet there is no formal statement identifying this need in standard, 200, 600 or the Co-ordinate Operations Standard (currently under development).

Note that the SDT did not use the terms, 'wide area impact' and 'local impact' in this standard. There is no industry consensus on the definitions of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The SDT does expect that studies will need to be conducted in advance and will need to look beyond a single RA's Reliability Area. There were several suggestions that the standard be revised to include a requirement that the identification of IROLs be coordinated between adjacent RAs within an Interconnection. The standard has been revised to include this requirement.

**WECC**

**Minnesota Power MP**

**Public Works Commission Fayetteville PWCF**

**Southern California Edison SCET**

**Salt River Project SRP**

**Tucson Electric Power Company TEPC**

**Platte River Power Authority TP PRPA**

The definition of "cascading" is inconsistent with NERC definitions found elsewhere. The definition of "wide area impact" is overly broad, stating the area affected is "always larger than the local area monitored by a single transmission operator." By this definition, the affected area could be large (such as a major metropolitan area or multi-state RTO) and still not be considered a "wide area impact."

Note that the SDT did not use the terms, 'wide area impact' and 'local impact' in this standard. There is no industry consensus on the definitions of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The SDT did update its definition of 'cascading' to clarify what was intended. The new definition of 'cascading outages' is as follows:

The uncontrolled successive loss of system elements triggered by an incident at any location which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

The new definition of cascading outages conforms with the threshold criteria used for reporting outage-related disturbances to the Department of Energy.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding any SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Gainesville Regional Utilities GVL (LSEs)**

**City of Tallahassee TAL (Transmission Owners)**

Wide Area Impact: The impact of an event that, if left untended, could lead to voltage instability, cascading outages or uncontrolled separation that jeopardizes the reliability of an interconnection. (This is really the same as the definition for the IROL. Are they really trying to define “wide area”? This does not seem to be correct. What does it add?) The geographic size of the area affected by such an event is always larger than the local area monitored by a single transmission operator and may also be larger than a single Reliability Authority’s area.

Note that the SDT did not use the terms, ‘wide area impact’ and ‘local impact’ in this standard. There is no industry consensus on the definitions of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The SDT did update its definition of ‘cascading’ to clarify what was intended. The new definition of ‘cascading outages’ is as follows:

The uncontrolled successive loss of system elements triggered by an incident at any location which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

The new definition of cascading outages conforms with the threshold criteria used for reporting outage-related disturbances to the Department of Energy.

**Power Pool of Alberta PPOA**

Standard 200 needs enhanced definitions of IROL and wide area impact, in order to more precisely define the portions of power systems that IROLs are meant to protect. At a minimum there should be recognition of the need for adjacent Reliability Authorities to reach a common understanding of wide area impact.

The SDT does expect that studies will need to be conducted in advance and will need to look beyond a single RA’s Reliability Area. There were several suggestions that the standard be revised to include a requirement that the identification of IROLs be coordinated between adjacent RAs within an Interconnection. The standard has been revised to include this requirement.

**Sacramento Municipal Utility District SMUD**

The definition of "Wide Area Impact" is overly broad.

Note that the SDT did not use the terms, ‘wide area impact’ and ‘local impact’ in this standard. There is no industry consensus on the definitions of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The SDT did update its definition of ‘cascading’ to clarify one of the probable impacts of exceeding an IROL for a time greater than  $T_v$ . The new definition of ‘cascading outages’ is as follows:

The uncontrolled successive loss of system elements triggered by an incident at any location which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

The new definition of cascading outages conforms with the threshold criteria used for reporting outage-related disturbances to the Department of Energy.

**Southern Company Services SOCO (Generators)**  
**Southern Company Services SOCO (Transmission Owners)**  
**Georgia Power Company (LSEs)**

Wide Area/Local Area

The following definition is included in the standard. Although this is a start in the right direction, the NERC OC indicated a need for better defining wide and local areas. It seems that it would be prudent to wait and include any clarifications to the definitions from the OLDTF and/or RCWG. This is an example of two different, but related objectives working on incongruous timetables. Southern Company Services SOCO (Generators)

As interpreted from the note pertaining to definitions on page 1 of the standard, a vote for approving this standard also approves the definitions within even though the definitions will be pulled out into a separate definitions document. If the separate definitions document can then be easily modified according to subsequent recommendations from the OLDTF and RCWG, this would help alleviate this issue.

The SDT did not use the terms, 'wide area impact' or 'local area' in this standard. There is no industry consensus on the definition of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

Note that the FMRTG could not agree on a definition of Wide Area, and the SDT did not find that the definition produced by the OLDTF is useful in determining the scope of the 'wide area'. The OLDTF's definitions for Local Area and Widespread Area are

Local Area: The portion of a Widespread Area, predetermined by appropriate analyses, where the impact of a Contingency or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond the local boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a Widespread Area indicates significant impact to the Interconnection.

Widespread Area: Any area that extends beyond any predefined Local Area.

The SDT did refine the definition of cascading outages to help clarify one of the probable impacts of exceeding an IROL. The refined definition of cascading outages ties to the threshold criteria used for reporting outage-related disturbances to the Department of Energy. The new definition of cascading outages is:

"The uncontrolled successive loss of system elements triggered by an incident at any location which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes."

**Western Area Power Administration - CM WACM**

There needs to be further development in the definitions of "wide- spread" and "local" impact. The SDT did not use the terms, 'wide area impact' or 'local area' in this standard. There is no industry consensus on the definition of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

**Wisconsin Energy Corporation - PM WEC**

Do not agree that the area must be larger than a single transmission operator.

The SDT did not use the terms, 'wide area impact' or 'local area' in this standard. There is no industry consensus on the definition of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Local Area**

**Electricity Consumers Resource Council**

We are concerned that the definition or criteria regarding the differentiation between "Local" and "Wide Area Impact" is unclear. The proposed standard does not appear to provide adequate responses if the electric area to be included in the limit is larger than the portion of the transmission system under the authority of a single Reliability Authority (RA). The standard should clearly explain how an RA can order all TO's, BA's, IA's and other RA's to take necessary actions if they are not within the controlling RA's reliability area.

The SDT did not use the terms, 'wide area impact' or 'local area' in this standard. There is no industry consensus on the definition of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

## 201 IROL Identification

### **Requirements**

#### (a) Requirements

- (1) The Reliability Authority shall identify and document which Facilities (or groups of Facilities) in ~~the its Reliability Authority's~~ Reliability Authority Area are subject to Interconnection Reliability Operating Limits<sup>1</sup>. (footnote: <sup>1</sup> Each IROL is developed by following the requirements in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.)
  - (ii) All Reliability Authorities that share a Facility (or group of Facilities) shall agree on whether that Facility (or group of Facilities) is (are) subject to Interconnection Reliability Operating Limits.
- (2) The Reliability Authority shall identify ~~each~~ Interconnection Reliability Operating Limits for its ~~within the Reliability Authority's~~ Reliability Authority Area. Each Interconnection Reliability Operating Limit shall have a  $T_v$  that is smaller than or equal to 30 minutes.
  - (i) ~~The Reliability Authority shall identify a  $T_v$  for each Interconnection Reliability Operating Limit.~~
- (3) All Reliability Authorities that share a Facility (or group of Facilities) subject to an Interconnection Reliability Operating Limit, shall agree upon the process used to determine that Interconnection Reliability Operating Limit and its associated  $T_v$ .

### **Summary Consideration:**

Several balloters indicated a need to have coordination between RAs in setting IROLs that involve more than one RA. The SDT added a requirement that RAs sharing a Facility must have a process for determining whether that Facility is subject to IROLs and for setting the IROL and its  $T_v$ .

Several balloters indicated that there needs to be a formal link between this standard and Standard 600. The link was added to the first requirement, and indicates that each IROL is developed following the requirements in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard.

Many balloters requested that  $T_v$  be set at a maximum of 30 minutes, and this upper limit was added to the definition of  $T_v$  as well as to this requirement.

- **Add other Functions**

**Georgia Power Company (LSEs)**

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

The standard has been changed so that the RA is the responsible party for managing IROLs. Although the supporting documentation for this standard indicates that responsibilities CAN be delegated (see excerpt below), it is important to note that the ultimate responsibility lies with the RA and the standard itself does not speak to a delegation of responsibilities.

The technical discussion of the Functional Model includes a discussion on delegating tasks, and clearly states that a task may be delegated, but not its associated responsibilities for compliance. The SDT doesn't believe it is necessary to add language to each of the standards indicating that a requirement may be delegated. Note that if this task is delegated, the RA is still responsible for compliance.

**MAIN**

The standard as drafted appears to place a sole responsibility with the Reliability Authority for determining which "facilities," Interconnection Reliability Operating Limits, and  $T_v$  are appropriate. It was stated on the informational call held by NERC that the RA is assumed to be the local system operator not the Reliability Coordinator. At least some members are of the opinion that the RA should work jointly, and in cooperation, with the Reliability Coordinator, Control Area Operator, Transmission Owner, Transmission Operator and Transmission Provider to accomplish the identification called for in section 201. This is a reasonable approach that will ensure complete identification of the facilities and limits, and further ensure a common understanding of any directives from the RA. The measurements could remain as stated.

New reliability standards are being developed using the terminology defined in the Functional Model. Only functions identified in the Functional Model are assigned responsibility for requirements in these new standards. The Reliability Coordinator and Control Area Operator are not 'functions' defined in the Functional Model and will not be identified as being responsible for any requirements in the new standards.

- **Set  $T_v$  at a Max of 30 min**

**AEP Service Corp -- Transmission System AEP (Transmission Owners)**

$T_v$ , which is defined as the maximum time that an Interconnection Reliability Operating Limit (IROL) can be exceeded without compliance sanctions being applied, has no maximum limit. Currently policy requires OSL violations to be corrected within 30 minutes. The proposed standard would allow a Reliability Coordinator to choose what he believes to be an appropriate  $T_v$  for each IROL. With no maximum  $T_v$  required, there is potential for Reliability Coordinators to choose something much longer than 30 minutes in order to minimize their exposure to a compliance sanction. Placing no restrictions on how long an IROL can be exceeded is not in the best interest of reliability.

The standard has been changed to indicate that  $T_v$  cannot be set higher than 30 minutes. The RA should establish a  $T_v$  that is appropriate to each IROL. IROLs should **never** be exceeded for any length of time, but because operations can't always be predicted, there are events that occur that

can cause an IROL to be exceeded. The  $T_v$  is a recognition that system operators can't re-dispatch or reconfigure their system instantaneously and  $T_v$  allows the system operators some time to take corrective actions before the risk to the interconnection becomes unacceptable.

### **Allegheny Power AP**

$T_v$  should have a default value of 30 minutes. Variations should be permitted with reason.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Bonneville Power Administration Transmission BPAT**

We recommend a NERC maximum  $T_v$  of 30 minutes with the option for the NERC Region and/or the Reliability Authority to set a shorter  $T_v$  as appropriate.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Boston Edison Company BECO (Transmission Owners)**

NSTAR shares the general concern that the standard is not specific relative to the time in which the system should be placed back to a secure state. This leaves the requirement as an open ended one and we feel it should have a maximum duration established, preferably 30 minutes.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **City Water Light & Power CWLP**

There is no upper limit to  $T_v$ . I believe it should have an upper limit of 30 minutes.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Con Edison Company of New York CEPD (LSEs)**

### **Con Edison Company of New York CEPD (Brokers)**

### **Consolidated Edison Co. of New York NYCE (Generators)**

The existing NERC Policy 2 limits the time an IROL shall be exceeded to 30 minutes. Permitting a Reliability Authority to establish a  $T_v$  in excess of 30 minutes for certain IROLs, as permitted by the proposed Standard 200, implies that not restricting the maximum value of  $T_v$  poses no threat to reliability. However, we know of no method for calculating the reliability risk of increasing  $T_v$  above 30 minutes. Moreover, if Reliability Authorities were permitted the option of expanding  $T_v$  beyond 30 minutes according to what they perceive as acceptable risk, the reliability of neighboring systems will be impacted by decisions they have no control over.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

In addition, some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs develop a single IROL with a single  $T_v$  for each shared Facility (or group of Facilities) subject to IROLs.



### **Consumers Energy CETR (LSEs)**

Tv should not be left without a default value that represents a generally recognized value used by much of the industry.

Tv should have a default value assigned of 30 minutes. If explicitly justified and coordinated with other RA's or entities whose areas may be affected by by the IROL, the Reliability Authority should then have the ability to override the default value.

There were many balloters who indicated a need to set an upper limit on Tv and the standard has been changed to include this restriction. Requiring a default of 30 minutes defeats the purpose of allowing RAs the flexibility of developing a Tv that is best for each IROL.

Some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs develop a single IROL with a single Tv for each shared Facility (or group of Facilities) subject to IROLs.

### **Consumers Energy CETR (TDUs)**

Consumers Energy votes against this proposed standard because it fails to establish specific Interconnection Reliability Operating Limit measures and specific Tv values for those measures. Further it leaves the development of such measures to each Reliability Authority, thus potentially causing significant differences in compliance requirements between control areas without a workable mechanism to come to consensus on the appropriate measures and Tv values.

There were many balloters who indicated a need to set an upper limit on Tv and the standard has been changed to include this restriction.

Some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs develop a single IROL with a single Tv for each shared Facility (or group of Facilities) subject to IROLs.

### **Duke Power DUKE (Electric Generators)**

#### **Duke Power DUKE (LSEs)**

#### **Duke Power DUKE (Transmission Owners)**

This standard has "lost" the recognition of current Policy that recovery from an OSL violation should be capped at some maximum amount of time. Recommend that a maximum time for recovery be developed which will limit the exposure of the Interconnection to the OSL risk while recognizing the various time duration assumptions used in the development of the associated equipment rating(s).

This standard was intended to change the focus of system operators from 'recovery' to 'prevention'. This standard includes several requirements that are more explicit and more stringent than the language in Policy 2. Collectively, these new requirements aim to help the system operator be more focused in monitoring limits and taking actions to PREVENT instances of exceeding any IROLs. The standard does recognize that there may be instances where an IROL is exceeded, and the standard requires that system operators have a plan to follow so that if faced with the situation, the system operator will know what to do to mitigate the incident.

There were many balloters who indicated a need to set an upper limit on Tv and the standard has been changed to include this restriction.

### **Electricity Consumers Resource Council**

NERC's current Operating Policy 2 limits the time an IROL (TV) can be exceeded without compliance sanctions to a maximum of 30 minutes. The proposed standard implies that TV's may be greater than 30 minutes. This change must be more fully explained.

NERC's Policy 2 focuses on 'recovery' when a limit has been exceeded. The SDT drafted this standard to change the focus from 'recovery' to 'prevention'. This standard includes new requirements that go beyond what is required in Policy 2. The new standard puts most of its emphasis on preventing instances of exceeding an IROL. The new standard requires that system operations:

- Have a list of their facilities subject to IROLs
- Be able to identify current IROLs with a  $T_v$  for each
- Have procedures, processes or plans for preventing as well as mitigating instances of exceeding IROLs
- Conduct operational planning analyses and real time assessments with a focus on IROLs
- Take action or direct others to take action to prevent instances of exceeding IROLs

Because exceeding an IROL for any length of time is a risk to the interconnection, the SDT initially did not think that it was necessary to set an 'upper limit' on the duration of  $T_v$ . However, the balloters have clearly indicated a desire to have an 'upper limit' and the standard has been changed to add an upper limit for  $T_v$  of 30 minutes.

### **Exelon Energy Delivery EED - PECO & ComEd (LSEs)**

#### **Exelon Generation Company LLC EXGN**

Exelon believes that a maximum  $T_v$  should be established, and a requirement should be put in place for the coordination of  $T_v$  for tie-lines and for limiting elements in different RAs that are results of a common contingency

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

Some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs develop a single IROL with a single  $T_v$  for each shared Facility (or group of Facilities) subject to IROLs.

### **FirstEnergy Corp**

FirstEnergy does not agree that there should be an open ended position on the  $T_v$ . The development of  $T_v$ , as stated in the standard, is open to determination by the Reliability Authority. There needs to be a maximum time limit established, such as the current 30 minute as stated in NERC policy

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **FirstEnergy Solutions FESC (LSEs)**

FES does not agree that the  $T_v$  should be open ended to determination by the Reliability Authority.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **FirstEnergy Solutions FESC (Brokers, Aggregators, and Marketers)**

My main concern is that standards should not left up to determination by the individual RAs. Since the individual RAs have a different risk tolerance, the standards may vary over the different RAs and may impact the market.

Some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs develop a single IROL with a single  $T_v$  for each shared Facility (or group of Facilities) subject to IROLs.

### **Gainesville Regional Utilities GVL (Generators)**

I also believe that IROL  $T_v$  should be defined(30 Minutes).

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Great River Energy GRE**

I have concerns about having an undefined upper limit on  $T_v$ . I would suggest thirty minutes if anything greater than thirty minutes being adopted as an exception to the standard needing approval by the appropriate committee.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Hydro One Networks Inc. (Transmission Owners)**

We are very much concerned that the a diluted version of the existing standard is posted for approval post August 14 outage.

Core Reliability Standards such as this one should be extremely stringent and prescribed for all entities. Entities such as RC or CA should not have inconsistent practices to determine their own  $T_v$ . As a minimum maximum value of  $T_v$  should be prescribed.

NERC's Policy 2 focuses on 'recovery' when a limit has been exceeded. The SDT drafted this standard to change the focus from 'recovery' to 'prevention'. This standard includes new requirements that go beyond what is required in Policy 2. The new standard puts most of its emphasis on preventing instances of exceeding an IROL. The new standard requires that system operations:

- Have a list of their facilities subject to IROLs
- Be able to identify current IROLs with a  $T_v$  for each
- Have procedures, processes or plans for preventing as well as mitigating instances of exceeding IROLs
- Conduct operational planning analyses and real time assessments with a focus on IROLs
- Take action or direct others to take action to prevent instances of exceeding IROLs

Because exceeding an IROL for any length of time is a risk to the interconnection, the SDT initially did not think that it was necessary to set an 'upper limit' on the duration of  $T_v$ . However,

the balloters have clearly indicated a desire to have an ‘upper limit’ and the standard has been changed to add an upper limit for  $T_v$  of 30 minutes.

Some balloters indicated a concern about the need for more specific coordination of IROLs on ‘shared’ facilities. The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

### **Hydro One Networks Inc (LSEs)**

The value  $T_v$  defined in the standard at the time an Interconnection Reliability Operating Limit (IROL) can be exceeded within compliance is not given a maximum limit as presently stated in NERC’s Operating Policy 2. The proposed draft does not limit the values and implies that violations of over 30 minutes are acceptable to the North American Bulk Power System. The lack of method to determine acceptable risks is of special concern after the experience of the August 14th, 2003 events. Hydro One Networks does not support the concept that response times greater than 30 minutes are acceptable.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Hydro-Quebec HQT**

The proposed Standard implies that  $T_v$ ’s may be greater than 30 minutes and may represent an acceptable risk to the North American bulk power system. There is no method or criteria established for determining acceptable risk or impact on reliability identified in the Standard or the associated Q&A. Therefore, it is difficult to support the statement that a response time greater than 30 minutes is acceptable.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **New York Power Authority MED**

### **National Grid USA**

### **New Brunswick Power Corporation NBPC**

### **Niagara Mohawk NMPC**

### **New York Power Authority MED**

### **Northeast Utilities NU**

### **Nova Scotia Power NSPI**

### **Ontario - Independent Electricity Market Operator IMO**

### **United Illuminating UICO**

### **New York Power Authority NYPA**

### **ISO New England Inc ISNE**

It is National Grid’s (NPCC’s) (UI’s) (ISO-NE’s) position that  $T_v$ , the time an IROL can be exceeded without compliance sanctions, be limited to a maximum of 30 minutes as presently stated in NERC Operating Policy 2. The proposed Standard implies that  $T_v$ ’s may be greater than 30 minutes and may represent an acceptable risk to the North American bulk power system. There is no method or criteria established for determining acceptable risk or impact on reliability

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identified in the Standard or the associated Q&A. Therefore, it is difficult to support the statement that a response time greater than 30 minutes is acceptable.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**Kansas City Power & Light KCPL**

The standard must state the maximum time allowed for  $T_v$

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**MAAC**

I agree with commenters who suggest that there should be a 30 minute maximum limit to  $T_v$ , the "at risk" interval, and with the obligation that action should be initiated as soon as possible after recognition that a limit has been exceeded. I don't think that these are reasons enough to vote no, but would support them as additions to the standard.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**MAIN**

A maximum  $T_v$  should be established, and further a requirement should be put in place for the coordination of  $T_v$  for tie-lines and for limiting elements in different RAs that are results of a common contingency. This is the time that the Reliability Authority has to bring the violation back within limits. The current time maximum value for SOL's is 30 minutes. The proposed standard for this new subset of SOL's that effect interconnections doesn't have a cap and should if this standard will have any teeth, plus the standard should exemplify to the public that the industry is concerned about reliability Retaining 30 minutes as the cap is reasonable.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

Some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

**Midwest Independent Transmission System Operator, Inc.**

There should be some maximum cap on  $T_v$ .

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**Mirant Americas Energy Marketing LP MAEM**

Under Section 201, concerned that a maximum  $T_v$  is not defined for the interconnect. Can appreciate the drafting teams intent here (allow flexibility), but we're supposed to be talking about the reliability of the interconnection here, and I have a tough time understanding how there isn't a maximum  $T_v$  for the interconnection.

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There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**New York State Reliability Council**  
**LIPA LIPA (Transmission Owners)**

Allowing  $T_v$  to exceed 30 minutes as permitted by proposed Standard 200 would degrade NERC criteria and therefore would threaten reliability by increasing the risk of voltage instability, cascading outages, and uncontrolled system separation.

The existing NERC Policy 2 limits the time an IROL shall be exceeded to 30 minutes. Permitting a Reliability Authority to establish a  $T_v$  in excess of 30 minutes for certain IROLs, as permitted by the proposed Standard 200, implies that not restricting the maximum value of  $T_v$  poses no threat to reliability. However, we know of no method for calculating the reliability risk of increasing  $T_v$  above 30 minutes. Moreover, if Reliability Authorities were permitted the option of expanding  $T_v$  beyond 30 minutes according to what they perceive as acceptable risk, the reliability of neighboring systems will be impacted by decisions they have no control over.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

Some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

**NPCC**  
**LIPA LIPA (Transmission Owners)**

$T_v$ , the time an IROL can be exceeded without compliance sanctions, should be limited to a **maximum** of 30 minutes as presently stated in NERC Operating Policy 2.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**Northeast Utilities NU**

The Standard must, as a minimum, clearly define the acceptable time of violation for each IROL. The Standard is developed to address contingencies that could result in instability, voltage collapse, uncontrolled separation and/or cascading outages that could impact the integrated bulk power system.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**Transmission Agency of Northern California – TANC**

The other reason we are voting "No" is that in the standard, the time allowed for the system to return to safe operating limits following a disturbance ( $T_v$ ) is a variable whose value is based on the particular limit being violated. This concept is fine. However, there is no upper limit to  $T_v$ . The Reliability Authority is responsible for setting  $T_v$ , but without a limit on the maximum

amount of time allowed to return the system to within its operating limits, some areas could end up setting values of  $T_v$  that could put other areas at risk.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

## **NYISO**

### **Ontario - Independent Electricity Market Operator IMO** **New England ISO**

The Standard 200 does not set a maximum limit to the “at risk” interval (“ $T_v$ ” in Standard 200 - the time a Reliability Operating Limit can be exceeded without compliance sanctions). Current NERC policy effectively establishes a maximum “at risk” interval of 30 minutes, and we believe this must be carried forward in Standard 200 to ensure a timely and implementation of the standard and for the standard to meet reliability objectives. Providing future flexibility for the Reliability Authority, or some other authority, to establish an acceptable longer “at risk” interval may be possible, but we recommend an evolutionary approach to this development of the standard.

Recommendation: the parameter  $T_v$ , be limited to a maximum value of 30 minutes.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

## **Public Service Company of New Hampshire PSNH**

The primary objection is that this standard would now allow a Reliability Authority (RA) to define the acceptable time of violation of each IROL. We now operate with the expectation that the transmission system will be returned to within Operating Security Limits as soon as possible, but no longer than 30 minutes. Given the August 14 Blackout, how can we as an industry allow an RA to lesson this expectation?

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

## **Southern Company Services SOCO (Generators)**

### **Southern Company Services SOCO (Transmission Owners)**

Please note in the excerpt below that each RA may use whatever system it wants for choosing  $T_v$ . This will certainly be an important issue along seams, especially if there is no limit for  $T_v$ . “How do you establish a  $T_v$  for an IROL?”

Each RA may use whatever system it wants for establishing a  $T_v$  for its IROLs. This gives each RA the latitude to be as conservative as it desires. Some RAs may choose to use a default  $T_v$  of 30 minutes — currently some entities have a default of 20 minutes for all limits that would be categorized as IROLs. One of the benefits of this variable  $T_v$  is that it gives an RA that operates in a market environment greater flexibility before implementing remedial actions that have the effect of negatively impacting that market.”

Southern recommends a cap (maximum) for  $T_v$  of 30 minutes. The 30-minute limit is the best benchmark we have as a maximum value and should be considered as the cap unless an alternative value can be shown to be more appropriate.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

Some balloters indicated a concern about the need for more specific coordination of IROLs on 'shared' facilities. The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

By definition, all IROLs are significant and impact the reliability of the Interconnection. Therefore, the reasoning for allowing an RA the full range to determine  $T_v$  is especially bothersome. The best compromise is for the standard to set a maximum  $T_v$  and allow the RAs to set it up to that cap. In addition, although various market solutions can/should be used to manage the system in an attempt to avoid IROLs, it should not dictate or drive what  $T_v$  should be set at.  $T_v$  should be set according to the severity of the situation, not according to the least cost/least impact to the market. Once you are dealing with IROLs and into the  $T_v$  period, you are at a critical operating state. In a response to comments the SDT stated, "Including specific language that references tariffs and market issues is outside the scope of NERC's reliability standards."

Not only should specific language that references markets be absent, but those markets should not drive aspects of reliability standards to the detriment of reliability. The 30-minute limit contained in Policy 2 is the best benchmark we have as a maximum value and should be used as the cap.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**Southern Company Services SWE**

For  $T_v$  related to an Interconnected Operating Reliability Limit, IROL: The Standard allows the Reliability Authority to identify the  $T_v$  for each IROL. It is recommended that the  $T_v$  time limit not be open ended but require the RA to establish a maximum time limit of 30 minutes (as current policy requires) to return to normal operating conditions. It could be less if the RA deems it necessary.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**Wisconsin Public Service Corporation WPS**

The  $T_v$  should have a maximum time limit that coincides with the max value for SOL's.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

**Westar Energy WR**

The unlimited  $T_v$  allows an entity to set a  $T_v$  value "accepting risk" for some period of time, while neighboring entities are also exposed to the risk but are unable to limit the  $T_v$  that is defined. A variable  $T_v$  with a maximum of 30 minutes or 1 hour would be more acceptable. If more time is needed to resolve loading problems, actions should be started prior to reaching the IROL.



There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **American Transmission Company LLC ATC (Transmission Owners)**

#### **MAIN**

The treatment of  $T_v$  is incomplete in a number of ways. For example, the compliance monitoring process requires a list of facilities and associated operating limits subject to IROL's but without mention of the associated  $T_v$  for each of that list's facilities (Section 201 (d) (3)). Conformance to the NERC Functional Model could be improved since the current version of the Functional Model makes the Reliability Authority responsible for determining IROL's but not specifically the time limits associated with those IROL's. Finally, the standard allows for some radical values of  $T_v$ . If  $T_v$  is set to zero, for instance, it creates the possibly unintended requirement to operate some facilities to an N-2 criterion.

The requirement and the measures already include a requirement that there be a  $T_v$  for each IROL.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Western Area Power Administration - CM WACM**

$T_{sub v}$  needs to be developed with a maximum time limit. All IROLs are significant, by definition, and should not have the latitude of an open ended requirement.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

### **Westar Energy WR (LSEs)**

We feel that there should be a specific length of time to correct any violation. If that time is exceeded, then penalties should occur. The way the rule is currently written, an entity could be violating a reliability limit for an indefinite length of time with no penalty.

There were many balloters who indicated a need to set an upper limit on  $T_v$  and the standard has been changed to include this restriction.

#### **MAIN**

Having identified the IROLs in advance there needs to be allowance for reacting to a system circumstance that has similarity to what was predefined but has some operationally significant differences in real time. e.g. there could be instances where an operator is directed to follow a predefined solution to an operating limit that may be invalid due to different circumstances that exist on the transmission system. While we are not trying to suggest that the process be burdened with debates, we believe that there should be a provision for discussions of conditions and effective actions, where time allows.

This standard doesn't require the RAs to follow their action plans, they may adjust these plans to meet real time conditions. For IROLs that can't be exceeded for more than a few cycles, special protection systems or remedial action schemes may be installed.

- **Tv – Seams issues & 2<sup>nd</sup> Party Review**

**Western Area Power Administration - CM WACM**

One of the on-going problems that has existed from region to region, and in some cases, within sub-regions, is the development of a consistent operating limit. While the purpose of this standard is to enforce the observance of those limits, we feel that there needs to be more proscriptive wording within the standard for the creation to those limits.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

**Bonneville Power Administration - Power Business BPAP**

201.a.2.i states that the Reliability Authority (RA) shall identify the maximum time that an Interconnected Reliability Operating Limit (IROL) can be exceeded without compliance sanctions being applied for each IROL. Presently WECC states the time limit as 20 minutes for stability and 30 minutes for thermal limitations. It should not be the responsibility of each individual RA to set the time limit, but rather the responsibility of the NERC Region (or sub region at the very least). There are paths on which energy flows between different RA's areas of responsibility. There is, under the proposed wording, the possibility that two different time limits be set, one by each RA? This could lead to much confusion.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

If a Region wants to establish limits that are more stringent than the NERC standard, that is acceptable without the need to revise the language in the standard. If a Region wants to establish a standard that is less restrictive than the NERC standard, then the Region must request a Regional Difference.

**Allegheny Power AP**

Adjoining Reliability Authorities should be allowed to review Tvs.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

**Allegheny Power AP**

Regional Councils should monitor Tvs.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

If a Region wants to monitor and/or approve the Tvs of its Region, the Region may request this outside of the NERC standard. If a Region wants to require that the Tvs be submitted to the Region as part of this standard, then the Region should request a Regional Difference as part of this standard.

## **Ontario Power Generation Inc OPG**

### SECTION 201:

Tv needs to be specified and should be consistent, at least across each interconnection.

A maximum for Tv has been established.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

## **PSEG Energy Resources & Trade LLC PS**

### **PSEG Power LLC**

### **Public Service Electric and Gas Company (LSEs)**

The RAs should be required to ensure that the facilities monitored and the physical and time limits are consistently determined within their footprint and coordinated with interconnected RAs to ensure consistency. (Section 201)

Standard 600 requires that there be a methodology used to develop SOLs that are a basis for IROLs.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

## **Reliant Resources Inc RRI**

Sec 201 - There is no consistency required between Reliability Authorities as far as which flowgates are monitored, what physical limit they will be not allowed to exceed, and what time frame operating limits may be exceeded. A lack of consistency will lead to operating reliability problems as well as hinder market transactions that impact flowgates across multiple RAs.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

## **Wisconsin Energy Corporation - PM WEC**

The ability of the RA to both identify and set the Tv for IROL's lends itself to a natural conflict with the compliance sanctions. The longer the Tv the more time the RA has to act to mitigate the limit violation and avoid a stronger penalty in requirement 204. Suggest that the list of IROL's and their Tv may be developed by the RA but must be confirmed by the Planning Authority if not the same entity, or the RA's Regional Reliability Council. For RA's with dynamic or automated

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determination of IROL's and their Tv conformation of the criteria and methodology by the PA if not the same entity or the RA's RRC. Confirmation by a third party may ensure that the RA will not put the interconnection in undue risk.

T<sub>v</sub> has been revised so that it can't exceed 30 minutes.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

### **Electricity Consumers Resource Council**

Section 201 does not require consistency between RA's regarding the monitoring of flow gates. A lack of consistency will lead to reliability problems and must be resolved.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

### **City of Lakeland PLKT**

STD does not address seams issues and how the RA interacts with other RA's when seams problems arise

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

### **Consumers Energy CETR (TDUs)**

Consumers Energy votes against this proposed standard because it fails to establish specific Interconnection Reliability Operating Limit measures and specific Tv values for those measures. Further it leaves the development of such measures to each Reliability Authority, thus potentially causing significant differences in compliance requirements between control areas without a workable mechanism to come to consensus on the appropriate measures and Tv values.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

### **Minnesota Power MP**

In the MAPP region, the North Dakota and Manitoba to USA flowgates can be constrained by either thermal limits or stability limits. How could proposed standard 200 be approved for the stability attributes of these flowgates, without consideration of how the thermal attributes of these flowgates will be administered?

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

Thermal limits and stability limits can be IROLs if operating outside of these limits could lead to instability, cascading outages or uncontrolled separation that adversely impacts the interconnection. If operating outside of these limits does not lead to instability, cascading outages or uncontrolled separation, then these limits are not IROLs.

- **Add a link to the DFR Standard**

### **Carolina Power & Light Company CPL (Transmission Owners)**

#### **Carolina Power & Light Company CPL (LSEs)**

#### **Carolina Power & Light Company CPL (Generators)**

There needs to be additional verbiage in Standard 200 linking it to the Determine Facility Ratings Standard's methodology for establishing limits.

The following footnote has been added to the standard.

Each IROL is a system operating limit established by following the methodology established in the "Determine Facility Ratings, System Operating Limits and Transfer Capabilities" standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as '0' minutes or as long as 30 minutes.

### **Bonneville Power Administration Transmission BPAT**

The term "system operating limit" is used in the definition of the Interconnection Reliability Operating Limit (IROL) but it is not defined in this standard nor is there a reference that it is as defined in the proposed Standard 600, "Determine Facility Ratings, System operating Limits, and Transfer Capabilities". In Standard 200 there should be a clear understanding that the IROL is a subset of a "System Operating Limit" as defined in the proposed Standard 600.

The definitions developed by drafting teams are not intended to be unique to each standard. Each definition that is accepted by the industry will be entered into a common database and used by all drafting teams.

The following footnote has been added to the standard.

Each IROL is a system operating limit established by following the methodology established in the "Determine Facility Ratings, System Operating Limits and Transfer Capabilities" standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as '0' minutes or as long as 30 minutes.

**Entergy EES (Transmission Owners)**

At this time it appears the Determine Facility Ratings standard may provide for some coordination by stating that RAs, PAs, and TOPs will establish system operating limits for the areas for which they are responsible. However, this Operate Within IROL standard requires the RA to determine SOLs and then decide which of those will be used as IROLs, completely independent of, and not coordinated with the Determine Facility Rating standard requirements. These two standards must be coordinated. The IROLs used by the RAs in this standard must be a subset of the SOLs developed jointly under the Determine Facility Rating standard.

The following footnote has been added to this standard.

Each IROL is a system operating limit established by following the methodology established in the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes or as long as 30 minutes.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard does not require that System Operating Limits be developed jointly. The Determine Facility Ratings Standard requires that the RA develop System Operating Limits for its Reliability Area.

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

**Georgia Power Company (LSEs)**

The concept of operating to first contingency seems lost except where it is covered in the Determine Facility Ratings Standard. The idea that you are trying to protect for these circumstances should at least be mentioned in Standard 200. Southern thinks there should be additional verbiage in Standard 200 linking to the Determine Facility Ratings Standard’s methodology for establishing limits.

The following footnote has been added to this standard.

Each IROL is a system operating limit established by following the methodology established in the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes or as long as 30 minutes.

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

The concept of operating to first contingency seems to have been lost in the development of this standard. It is a core precept of reliable operations and should be included in this standard.

The concept of operating to first contingency is addressed in the Determine Facility Ratings Standard’s requirement for developing a methodology for System Operating Limits.

The following footnote has been added to the IROL Identification Requirement of this standard to clarify that IROLs are a subset of the System Operating Limits developed under the Determine Facility Ratings standard.

Each IROL is a system operating limit established by following the methodology established in the “Determine Facility Ratings, System Operating Limits and Transfer Capabilities” standard. IROLs are the subset of system operating limits that, if exceeded, may cause instability, uncontrolled separation or cascading outages. Each IROL has both a magnitude and a duration component. The duration component may be different for each IROL and may be as short as ‘0’ minutes or as long as 30 minutes.

## **PSEG Energy Resources & Trade LLC PS**

### **PSEG Power LLC**

#### **Public Service Electric and Gas Company (LSEs)**

Whatever emergency ratings are implemented by the RA, e.g., 24-hour, 4-hour, 30-minute, etc., the RA must possess the ability to relieve actual post-contingency overloads to acceptable levels within the time limit allowed by the particular rating invoked. (Section 201)

This standard has been revised so that  $T_v$  cannot exceed 30 minutes.

- **Add a requirement to share or post limits**

#### **Reliant Resources Inc RRI**

Sec 201 - There is no requirement to make the operating limits and time limits available to transmission users. Such information provides transparency to the market.

This standard is limited to addressing reliability issues. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

#### **Public Service Electric and Gas Company (Trans owners)**

The present language of the Standard proposed for Ballot must be modified to include the following issue

The RA must publically post the Operating Limits and time limits for all facilities under their jurisdiction.

The SDT is unaware of any reliability – related reason for posting operating limits. Some of these IROLs may be very dynamic and may change multiple times over the course of a day. Asking all RAs to post these without a reliability-related reason is beyond the scope of the SDT. If you are aware of a reliability reason for posting these limits, please submit the reason on the next posting. Keep in mind that an RA may request data from another RA if the data is needed to support reliability. Not all RAs are TSPs and some RAs will not have access to OASIS.

With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

**PSEG Energy Resources & Trade LLC PS**

**PSEG Power LLC**

**Public Service Electric and Gas Company (LSEs)**

In the interest of transparency of operating requirements, a provision requiring that the RA publicly and timely post the operating limits and time limits for every facility for which they have established such must be added. Such posting should be made on each OASIS covering any portion of the RA's footprint. (Section 201)

The SDT is unaware of any reliability – related reason for posting operating limits. Some of these IROLs may be very dynamic and may change multiple times over the course of a day. Asking all RAs to post these without a reliability-related reason is beyond the scope of the SDT. If you are aware of a reliability reason for posting these limits, please submit the reason on the next posting. Keep in mind that an RA may request data from another RA if the data is needed to support reliability. Not all RAs are TSPs and some RAs will not have access to OASIS.

With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

**Mirant Americas Energy Marketing LP MAEM**

Under Section 201, would like to see a requirement that the RA reveal the list of IROLs and facilities impacted by said IROLs, at a minimum to all RAs (possibly publicly available, but I'm not sure that's the right thing to do) in the relevant interconnection. This would enable necessary coordination of action plans.

The Coordinate Operations standard requires that each RA provide requested data to another RA if there is a reliability-related reason for the request. Publicly posting the data seems to be asking the RA to expend resources that may not be needed to support reliability. With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

**Ontario Power Generation Inc OPG**

**SECTION 201:**

Reliability Authorities should be obligated to publish, for market participant use, the list of facilities which they are monitoring and the limits on those facilities. In part, this will insure appropriate coordination between adjacent RAs.

This standard is limited to addressing reliability issues.

The standard was revised to include a requirement that RAs have an agreed upon process for developing IROLs for each shared Facility (or group of Facilities) subject to IROLs.

With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?



- **Add language indicating IROLs can be dynamic**

**Power Pool of Alberta PPOA**

Standard 200 should be changed to clearly reflect the fact that IROLs can be dynamic in nature.

One of the measures for requirement 201 was revised so that the RA must be able to demonstrate that it can identify its current Interconnection Reliability Operating Limits. This switch from having a 'list' should clarify that the IROLs may be dynamic.

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

The list of IROLs is a dynamic list. Standard 200 needs clear verbiage noting the dynamic nature of this list. In addition, the standard should not imply that if the limit is not on the list that you don't have to operate to it. The not-previously-identified events that would place you in an IROL should have the same requirements as those already on the list.

One of the measures for requirement 201 was revised so that the RA must be able to demonstrate that it can identify its current Interconnection Reliability Operating Limits. This switch from having a 'list' should clarify that the IROLs may be dynamic.

**National Grid USA**

**New Brunswick Power Corporation NBPC**

**New York Power Authority NYPA**

**Niagara Mohawk NMPC**

**New York Power Authority MED**

**Northeast Utilities NU**

**Nova Scotia Power NSPI**

**Ontario - Independent Electricity Market Operator IMO**

**Hydro One Networks Inc (LSEs)**

**Hydro-Quebec HQT**

It is National Grid's (NPCC's) (ISO New England) (Hydro Quebec HQT) position that Standard 200 should clearly reflect the fact that IROL's can be dynamic in nature. While it may be possible that every possible configuration can be identified in advance to deal with this dynamics, the reality is that this list would be extremely large and difficult to maintain. To improve on the situation, this section should require that the RA operators have a base set of limits that include N-1 configurations, along with identifying the following:

- The boundary conditions for which the published limits are applicable;
- The critical contingency that drive the applicable limit; and
- An understanding of what the associated limit is designed to protect the system against (i.e. transient stability, voltage decline, etc.)

One of the measures for requirement 201 was revised so that the RA must be able to demonstrate that it can identify its current Interconnection Reliability Operating Limits. This switch from having a 'list' should clarify that the IROLs may be dynamic.

With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

## **NPCC**

### **New York Power Authority MED**

### **Northeast Utilities NU**

### **LIPA LIPA (Transmission Owners)**

Standard 200 should reflect the fact that IROLs can be dynamic in nature. RAs should have a base set of limits that include N-1 configurations, along with identifying the following:

- The boundary conditions for which the published limits are applicable;
- The critical contingency that drives the applicable limit; and
- An understanding of what the associated limit is designed to protect the system against (i.e. transient stability, voltage decline, etc.)

One of the measures for requirement 201 was revised so that the RA must be able to demonstrate that it can identify its current Interconnection Reliability Operating Limits. This switch from having a 'list' should clarify that the IROLs may be dynamic.

With the next posting of this standard, the SDT will ask the industry the following question:

Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

- **Add requirement to study area beyond RA's perimeter**

## **Hydro One Networks Inc (LSEs)**

The Standard does not include clear definitions or criteria on how "local" and "Wide Area Impact" events are determined. Therefore, it is difficult to assess what electrical boundaries an IROL is meant to protect. The definition of Wide Area Impact points out that the electrical area to be included in the limit may be larger than the portion of the transmission system under the authority of a single Reliability Authority (RA). This indicates the need for studies and associated limits that transcend the boundaries of a single RA's purview, yet there is no formal

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**Comments on Requirement 201 – IROL Identification**

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statement identifying this need in standard, 200, 600 or the Co-ordinate Operations Standard (currently under development).

The definitions provided with this standard have been revised to improve the industry's understanding of the applicability of these terms to this standard. Note that the terms, 'local area' and 'wide area impact' are not used in this standard.

**Wide Area Impact:** ~~The impact of an event that, if left untended, could lead to voltage instability, cascading outages or uncontrolled separation that jeopardizes the reliability of an interconnection. The geographic size of the area affected by such an event is always larger than the local area monitored by a single transmission operator and may also be larger than a single Reliability Authority's area.~~

The impact of a single incident resulting in uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and ~~bulk~~ high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Operating within IROLs should prevent instability, cascading outages and uncontrolled separation.

### **South Carolina Electric & Gas Company SCEG**

This standard places a lot of emphasis on IROLs, however, no guidelines on how to determine an operating limit have yet been determined. It goes further by allowing an arbitrary 30 minute time limit – why not 15, 5, or 0 minutes? Some limits cannot be surpassed by 15 minutes, yet the standard allows for it. In another respect, some limits can be exceeded for far more than 30 minutes depending on the situation, but the standard ignores that. I know this standard is not meant to define limits, but how can one be expected to agree to its requirements until the definition of limits is better defined?

The definitions provided with the standard have been revised to assist in interpreting the applicability of this standard. The standard was revised, based on the numerous comments submitted by balloters, to indicate that  $T_v$  may not exceed 30 minutes.

### **NPCC**

#### **New York Power Authority MED**

#### **Northeast Utilities NU**

#### **LIPA LIPA (Transmission Owners)**

The Standard should establish criteria on how "local" and "Wide Area Impact" are determined. The definition of Wide Area Impact in the standard cites that the electrical area to be included may be larger than a single RA. This indicates the need for studies

and associated IROLs that transcend the boundaries of a single RA's purview, yet there is no statement identifying this need in the standard.

The definitions provided with the standard have been revised to assist in interpreting the applicability of this standard.

**National Grid USA**

**New Brunswick Power Corporation NBPC**

**New York Power Authority NYPA**

**Niagara Mohawk NMPC**

**New York Power Authority MED**

**Northeast Utilities NU**

**Nova Scotia Power NSPI**

**Ontario - Independent Electricity Market Operator IMO**

**United Illuminating UICO**

**Hydro-Quebec HQT**

The Standard does not include clear definitions or criteria on how “local” and “Wide Area Impact” are determined. Therefore, it is difficult to assess what electrical boundaries an IROL is meant to protect. This definition of Wide Area Impact points out that the electrical area to be included in the limit may be larger than the portion of the transmission system under the authority of a single Reliability Authority (RA). This indicates the need for studies and associated limits that transcend the boundaries of a single RA's purview, yet there is no formal statement identifying this need in standard, 200, 600 or the Co-ordinate Operations Standard (currently under development).

The definitions provided with the standard have been revised to assist in interpreting the applicability of this standard. The standard was revised, based on the numerous comments submitted by balloters, to indicate that  $T_v$  may not exceed 30 minutes.

**FirstEnergy Corp**

A fundamental problem is that it is difficult to determine what facility could be a potential IROL before the fact. The proposed document gives little guidance. In section 201, IROL Identification, the requirements simply state the Reliability Authority shall identify what facilities are subject to IROL, with no real guidance on how to do it. This leaves it up to the Reliability Authority to document how they will determine their IROLs, and then if anything goes wrong they will be second guessed that they did not do it right. If the Reliability Authority takes the extreme position and 'over' specify facilities as potential IROLs, they will cover themselves for any second guessing, but operate the system in a potentially overly conservative manner.

The definitions provided with the standard have been revised to assist in interpreting the applicability of this standard.

**MAIN**

The standard is not precise enough in defining where it should be applied. More specifically, the standard asks Reliability Authorities to designate facilities to be subject to IROL's, as distinct from SOL's, presumably on the basis of potential "Wide Area Impact," but the meaning of "Wide Area" remains an open question. For example, it remains undetermined whether the largest city or

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***Comments on Requirement 201 – IROL Identification***

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even some multi-state regions would meet the definition of "Wide Area."

The definitions provided with the standard have been revised to assist in interpreting the applicability of this standard.

## Measures

### (b) Measures

- (1) The Reliability Authority shall have a list of Facilities (or groups of Facilities) in its ~~the Reliability Authority's~~ Reliability Authority Area that are subject to Interconnection Reliability Operating Limits.
  - (i) The Reliability Authority shall have evidence it ~~has reviewed~~s and ~~updated~~s ~~the~~ its-list of Facilities (or groups of Facilities) to reflect changes in its Reliability Authority Area's system topology.
- (2) The Reliability Authority shall be able to identify the current values of the Interconnection Reliability Operating Limits for its Reliability Authority Area. Each of these Interconnection Reliability Operating Limits shall have a  $T_v$  that is smaller than or equal to 30 minutes.
  - (iii) The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$ .
- (3) The Reliability Authority shall ~~have evidence that it updates the list of~~ be able to demonstrate that its Interconnection Reliability Operating Limit values and their  $T_v$  ~~to~~ reflect current system conditions.

### Summary Consideration:

The measures were revised to conform to the changes requested in the associated requirements, specifically to add a requirement that addresses shared facilities and to modify the requirement so that the dynamic nature of IROLs is recognized.

### Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)

#### Manitoba Hydro MHEB (LSEs)

#### Manitoba Hydro (Transmission Owners)

The need for all system conditions to be studied as they occur should be emphasized. Statement 201 b.3 should be expanded to state that the limits and the mitigation steps must BOTH be reviewed and revised, if required, to reflect all changes in current conditions. This need could also be identified in 203 b.1.ii (i.e., an assessment must be followed by revision of limits and guides if conditions warrant)

The measures were revised to indicate that the RA must be able to demonstrate that the IROLs reflect current system conditions. This supports your suggestion.

## Compliance Monitoring

### Bonneville Power Administration Transmission BPAT

Section 201.d.2 states that the “Performance reset period shall be 12 months from the last violation”. I assume that this is per each IROL (or rated path), but there is no further information. Are the facilities/IROLs grouped into one for the reset period or is there a separate reset period for each facility/IROL?

The levels of non-compliance are based on not meeting the individual measures within a requirement. A violation occurs whenever a measure in the requirement has not been met. Each violation is considered a separate occurrence – and each successive violation would result in an increasingly more severe penalty. To reset the accumulation of occurrences, (end of the performance reset period) the RA needs to go 12 months without any violations.

The way the performance reset period works, performance is measured over the course of a 12 month period of time. If there is any violation during this time, then the performance reset period would not reset.

### Levels of Non-compliance

(e) Levels of Noncompliance

- (1) Level one: ~~Not applicable~~ No process for determining if shared Facilities (or groups of Facilities) are subject to Interconnection Reliability Operating Limits and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$ .
- (2) Level two: ~~Not applicable~~ No evidence that a shared Facility (or group of Facilities) has an Interconnection Reliability Operating Limit with a  $T_v$  that has been agreed to by all Reliability Authorities that share the Facility (or group of Facilities).
- (3) Level three: A level three noncompliance occurs if either of the following conditions are present:
  - (i) One or more Interconnection Reliability Operating Limits had a  $T_v$  that was greater than 30 minutes.
  - (ii) ~~No evidence that Either the list of Interconnection Reliability Operating Limits or the list of Facilities subject to Interconnection Reliability Operating Limits was not updated.~~
- (4) Level four: A level four noncompliance occurs if either of the following conditions are present:
  - (i) Could not identify the current values of the IROLs for its Reliability Area
  - (ii) No list of ~~Interconnection Reliability Operating Limits or no list of~~ Facilities subject to Interconnection Reliability Operating Limits exists for the ~~Reliability Authority's~~

#### AEP Service Corp -- Transmission System AEP Oklahoma Gas and Electric OKGE

The SDT needs to revisit the levels of non-compliance associated with this standard. If compliance is truly a black/white issue with no shades of gray as the proposed levels indicate, why not have just a level one with no financial penalty? The proposed non-compliance level implies that it may be more important to have a list of IROLs rather than a correct list of IROLs. Also, if no IROLs exist, there will be no list which would cause the reliability authority to be in non-compliant. There needs to be consistency throughout all the standards on documentation-type non-compliance.

This requirement was revised and its levels of non-compliance were also revised to address the elements that were added to the standard based on balloters comments.



## 202 Monitoring

### Requirements

#### Public Service Electric and Gas Company

The present language of the Standard proposed for Ballot must be modified to include the following issue

The RA is required to ensure that all facilities monitored within their area of responsibility are consistently determined and shared with adjacent RAs.

There is another requirement in this standard that requires each RA to develop a specification for data needed to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments. The data specification should address this concern.

The Coordinate Operations Standard addresses sharing data and information between RAs.

### Measures

#### (b) Measures

- (1) The Reliability Authority shall have a list of Facilities (or groups of Facilities) subject to Interconnection Reliability Operating Limits and shall have Interconnection Reliability Operating Limits available for its operations personnel's Real-time use.
- (2) The Reliability Authority shall have Real-time Data available in a form that system operators can compare to the Interconnection Reliability Operating Limits.
- (3) The Reliability Authority shall monitor system operating parameters and compare these against its Interconnection Reliability Operating Limits.

#### Southern Company Services SOCO (Generators)

#### Southern Company Services SOCO (Transmission Owners)

#### Georgia Power Company (LSEs)

The standard still seems to indicate a somewhat static list of IROLs. The SDT added a few words about the list having to be updated, but did not adequately address some other issues:

“What happens if you identify another (unexpected) limit during real-time that is not on the list? Are you not responsible for this case as well? We all know that planning studies cannot predict all the challenges that are faced in real-time.”

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Requirement 202 – Monitoring**

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The list of IROLs is a dynamic list. Standard 200 needs clear verbiage noting the dynamic nature of this list. In addition, the standard should not imply that if the limit is not on the list that you don't have to operate to it. The not-previously-identified events that would place you in an IROL should have the same requirements as those already on the list. In section 203, part b, "identified" should be removed from the last part of the sentence:

"The Reliability Authority shall identify operating situations or events that impact its Reliability Authority Area's ability to operate without exceeding any ~~identified~~ Interconnection Reliability Operating Limits."

One of the measures for requirement 201 was revised so that the RA must be able to demonstrate that it can identify its current Interconnection Reliability Operating Limits. This switch from having a 'list' should clarify that the IROLs may be dynamic. Your suggestion to remove the word, 'identified' was adopted and is reflected in the revised standard.

**Bonneville Power Administration Transmission BPAT**

In Section 202(b)(3), the standard indicates that the RA shall monitor "system operating parameters" which is an undefined term. It is unclear why the RA would need any information not included in the IROL to monitor the system. More explanation of what system operating parameters include is needed and how this information is different from the information in the IROL. It is recommended that "System Operating Parameters" be defined in the "Definition" section of the Standard and that it include something similar to "variables that impact the IROL".

Most industry commenters agreed with the original language in this requirement.

If the SDT defines system operating parameters, then readers may interpret the requirement to mean that IROLS should be limited to the listed parameters, and this isn't the intent. The standard only addresses the system operating parameters associated with the IROLS.

### **Levels of Non-compliance**

#### **AEP Service Corp -- Transmission System AEP Oklahoma Gas and Electric OKGE**

Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump directly to level four non-compliance? Is progressive non-compliance not an option? For example, if a reliability authority had identified 25 IROLs, he is level four non-compliant if only one of the IROLs is not available for real-time use. Shouldn't there be allowances for such situations? Also, perhaps a letter that lists critical displays and identifies discrepancies would be more beneficial to maintaining interconnection reliability than a monetary penalty.

Due to the severity of IROL violations, not being aware of one IROL is unacceptable.

#### **Kansas City Power & Light KCPL**

Question if compliance differentiates between telemetered and not telemetered but should

The definition of Real-time data allows for data to be collected manually – so there isn't a need to differentiate between telemetered and non-telemetered data.

## **203 Analyses and Assessments**

### **Requirements**

#### **Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

##### **Manitoba Hydro (Transmission Owners)**

The requirement to perform Operational Planning Analysis or the Real-time Assessment in standard 203 a should be more clearly defined. A methodology including any restrictions on or recommendations for how to perform these activities should be included in this standard.

The RA Certification Standard is expected to include a requirement that the RA have a process or procedure in place that identifies how it will perform its Operational Planning analyses and Real-time assessments. Each RA may have different tools and different operating constraints, and establishing a methodology that would be applicable to all RAs is more restrictive than necessary to support reliability.

#### **City of Tallahassee TAL**

How far out is the Real-time Assessment supposed to look? Only 30 minutes since it is run at least every 30 minutes, or up to the day ahead since a day ahead look is done at least every day. What is meant by "expected"? First contingency?

Real-time assessments look at real time information as well as future information. The RA needs to make a judgment about how far ahead the real-time assessment should look, based on its specific operating conditions.

The Operational Planning Analysis is conducted each day to look at the day ahead. The definition of Operational Planning Analysis has been modified to clarify that an operational planning analysis may look for the next day's operation up to 12 month's ahead. This standard only addresses the Operational Planning Analysis that is done to look at the day ahead with respect to operation without violating any IROLs.

## Measures

### (b) Measures

- (1) The Reliability Authority shall identify operating situations or events that impact its Reliability Authority Area's ability to operate without exceeding any identified Interconnection Reliability Operating Limits.
  - (i) The Reliability Authority shall conduct an Operational Planning Analysis at least once each day, evaluating the next day's projected system operating conditions.
  - (ii) The Reliability Authority shall conduct a Real-time Assessment periodically, but at least once every 30 minutes.

### Gainesville Regional Utilities GVL (Generators)

The second point as to when Contingency analysis needs to be run. The requirement says a requirement of 30 minutes. I believe this should be executed as needed without the requirement of 30 minutes.

The analysis should be conducted whenever needed, but must be conducted at least every 30 minutes.

### AEP Service Corp -- Transmission System AEP Oklahoma Gas and Electric OKGE

The proposed measures may be too weak. For example, it appears that a reliability authority could satisfy the operational planning analysis by evaluating an invalid case for a given day. While it meets the letter of the measure, it doesn't meet the intent of the measure. Also, does (b)(1)(ii) apply to IROLs that are associated with stability limits? If so, this measure would require a reliability authority to run real-time stability analyses every 30 minutes.

An RA that deliberately uses an invalid case is jeopardizing the reliability of its system as well as the interconnection and faces lawsuits and other public sanctions that are greater than any sanction associated with non-compliance with this standard.

The real-time assessment doesn't have to be a 'study'. The definition is: An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

The levels of non-compliance don't link sanctions to value judgments about the quality of assessments.

### Power Pool of Alberta PPOA

we see a requirement to enhance Section 203 (b), Measures, Analyses and Assessments. Measures (1)(i) as stated require "... an operating planning analysis [be conducted] at least once each day, evaluating the next day's projected system operating conditions". We propose that a review of the next day's projected system operating conditions, against a pre-described set of

operating conditions that governs IROLs, conducted at least once each day, should be considered an alternative to the above measure.

The suggested addition seems to be more of a definition of what is already understood to be done as part of the operational planning analysis and doesn't really add to the clarity of the standard.

### **Southern Company Services SOCO (Generators)**

#### **Southern Company Services SOCO (Transmission Owners)**

The list of IROLs is a dynamic list. Standard 200 needs clear verbiage noting the dynamic nature of this list. In addition, the standard should not imply that if the limit is not on the list that you don't have to operate to it. The not-previously-identified events that would place you in an IROL should have the same requirements as those already on the list. In section 203, part b, "identified" should be removed from the last part of the sentence: "The Reliability Authority shall identify operating situations or events that impact its Reliability Authority Area's ability to operate without exceeding any Interconnection Reliability Operating Limits."

The standard has been modified to clarify that system operators must be provided a current list of facilities subject to IROLs must be able to show its current Interconnection Reliability Operating Limits and must have IROLs available for its operations personnel's Real-time use.

While the list of facilities subject to IROLs is expected to be static, IROLs are expected to be dynamic. As soon as an IROL is identified, the system operators must begin monitoring parameters against those IROLs. This supports the industry's concern that the standard be changed to recognize that IROLs can be dynamic.

### **Levels of Non-compliance**

#### **AEP Service Corp -- Transmission System AEP**

##### **Oklahoma Gas and Electric OKGE**

Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump directly to level three non-compliance? Is progressive non-compliance not an option? Is missing an operational planning assessment one day in a month as detrimental as missing it 10-15 days per month? Similarly, is missing one real-time assessment as bad for reliability as missing these assessments for hours, on a regular basis?

For this requirement, missing one assessment may be as bad as missing many assessments.

#### **Kansas City Power & Light KCPL**

Is missing one assessment as bad as missing assessments for a period of time?

For this requirement, missing one assessment may be as bad as missing many assessments.

**204 Actions**

## Requirements

### (a) Requirements

(1) The Reliability Authority shall, **without delay**, act<sup>1</sup> or direct others to act to:

- (i) Prevent instances where Interconnection Reliability Operating Limits may be exceeded.
- (ii) Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded.

The Reliability Authority shall document instances of exceeding Interconnection Reliability Operating Limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding Interconnection Reliability Operating Limits for time greater than  $T_v$ .

- **Add the phrase, 'Act Immediately' – or 'Prudently'**

### ISO New England Inc ISNE

Standard 200 should clearly reflect requirements and measures that require all Reliability Authorities to initiate immediate corrective actions as soon as an Interconnection Reliability Operating Limit (IROL) is exceeded or the system is in an unanalyzed state. It is NPCC's position that NERC Standards should ensure mitigating actions are implemented when instability, uncontrolled separation, or cascading outages would occur as a result of a change in one or more operating parameter(s) as soon as the condition exists.

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

### NPCC

#### New York Power Authority MED

#### Northeast Utilities NU

#### LIPA LIPA (Transmission Owners)

Standard 200 should require all Reliability Authorities (RAs) to initiate *immediate* corrective actions *as soon as* the system is in an unanalyzed state or an IROL is exceeded ( $T=0^+$ ).

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

Requiring that system operators take actions when their system is in an unanalyzed state is beyond the scope of this standard.



### **Power Pool of Alberta PPOA**

Standard 200 should be changed to require that: corrective actions be taken immediately once an Interconnection Reliability Operating Limit (IROL) is exceeded, and the parameter  $T_v$ , the time an Interconnection Reliability Operating Limit can be exceeded without compliance sanctions being applied, be limited to a maximum value of 30 minutes

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP. The standard has also been revised to indicate that  $T_v$  may not be greater than 30 minutes.

### **Hydro-Quebec HQT**

Standard 200 should clearly reflect requirements and measures that require all Reliability Authorities to initiate immediate corrective actions as soon as an Interconnection Reliability Operating Limit (IROL) is exceeded or the system is in an unanalyzed state.

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

Requiring that system operators take actions when their system is in an unanalyzed state is beyond the scope of this standard.

### **United States Bureau of Reclamation**

It also appears that more focus is needed on assuring that operators take timely and appropriate actions to correct any violations of operating limits.

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

### **MAIN**

There is no specific language stating operators should begin to take action immediately to rectify the limit violation.

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

### **MAAC**

I agree with commenters who suggest that there should be a 30 minute maximum limit to  $T_v$ , the "at risk" interval, and with the obligation that action should be initiated as soon as possible after recognition that a limit has been exceeded. I don't think that these are reasons enough to vote no, but would support them as additions to the standard.

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

The standard has also been revised to indicate that  $T_v$  may not be greater than 30 minutes.

### **Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

Standard 200 must be revised with a clearer statement that action is required in a timely manner. This requirement should be included in standard 204 a.1.

The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP.

**Hydro One Networks Inc (LSEs)**

The Standard should contain clear requirements and measures to call for immediate action on the part of Reliability Authorities to initiate corrective actions as soon as an IROL is exceeded or the system enters into an unanalyzed operating state. Hydro One Networks’ position is that mitigating corrective actions must be initiated as soon as the condition exists.

The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP.

Requiring that system operators take actions when their system is in an unanalyzed state is beyond the scope of this standard.

**NYISO**

**Ontario - Independent Electricity Market Operator IMO**

**ISO New England**

The Standard 200 does not carry forward the current NERC Policy obligation to initiate action “as soon as possible” to restore system operation to a secure state. Our concern is that the introduction of compliance to standards must not diminish what has become accepted practice among large and sophisticated system operators to initiate actions as soon as possible to reduce the ‘at risk’ interval. The possible difficulties in implementing such a measure are understood, but we believe this change to the standard is necessary and achievable.

Recommendation: corrective action to be taken as soon as possible once an Interconnection Reliability Operating Limit (IROL) is exceeded.

The focus of this standard is on preventing an incident of exceeding an IROL, not just to take action after an IROL has been exceeded, which is the focus of Policy 2. The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP.

**National Association of Regulatory Utility Commissioners**

**New York State Public Service Commission**

The proposed standard lacks a definitive statement indicating that it is unacceptable to operate the bulk system beyond established limits and that the system must be returned to a reliable state of operation within a reasonable time frame.

The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP. The standard has also been revised to indicate that  $T_v$  may not be greater than 30 minutes.

**New York State Reliability Council**  
**LIPA LIPA (Transmission Owners)**

In addition, proposed Standard 200 fails to clearly require the Reliability Authority to initiate corrective actions as soon as a limit is exceeded.

We believe it is an unwarranted risk for Standard 200 to degrade present NERC criteria, particularly in the aftermath of the August 14, 2003 Blackout.

The focus of this standard is on preventing an incident of exceeding an IROL, not just to take action after an IROL has been exceeded, which is the focus of Policy 2. The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP.

**National Grid USA**  
**New Brunswick Power Corporation NBPC**  
**Niagara Mohawk NMPC**  
**New York Power Authority MED**  
**Northeast Utilities NU**  
**Nova Scotia Power NSPI**  
**Ontario - Independent Electricity Market Operator IMO**  
**United Illuminating UICO**

Standard 200 should clearly reflect requirements and measures that require all Reliability Authorities to initiate *immediate* corrective actions *as soon as* an Interconnection Reliability Operating Limit (IROL) is exceeded or the system is in an unanalyzed state. It is NPCC’s position that NERC Standards should ensure mitigating actions are implemented when instability, uncontrolled separation, or cascading outages would occur as a result of a change in one or more operating parameter(s) *as soon as the condition exists*.

The focus of this standard is on preventing an incident of exceeding an IROL, not just to take action after an IROL has been exceeded, which is the focus of Policy 2. The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP.

**Wisconsin Public Service Corporation WPS**

Language is not specific enough to operators about when to begin taking immediate action to rectify the limit violation.

The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP.

**New York Power Authority NYPA**

Standard 200 should clearly reflect requirements and measures that require all Reliability Authorities to initiate corrective actions as soon as an Interconnection Reliability Operating Limit (IROL) is exceeded. It is NPCC’s position that it should be ensured mitigating actions are implemented when instability, uncontrolled separation, or cascading outages would occur as a result of a change in one or more operating parameter(s) as soon as the condition exists.

The focus of this standard is on preventing an incident of exceeding an IROL, not just to take action after an IROL has been exceeded, which is the focus of Policy 2. The standard has been revised to add the phrase, ‘without delay’ to indicate that actions should be taken ASAP.

**Midwest Independent Transmission System Operator, Inc.**

Several people have mentioned that the Standard doesn't require immediate action. While the standard should encourage expeditious response, as the industry found out with the DCS, operators need a few minutes to interpret readings and alarms, select the proper response and then get resources deployed.

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

**Entergy Services ENTE (LSEs)**

Section 204(a) needs to be worded so that it is abundantly clear that a Reliability Authority must always act prudently to maintain the reliability of the system given the actual situation that has developed. In certain situations, prudent action may not include taking action to prevent exceeding a predetermined IROL or even mitigating the magnitude or duration of a violation. The definition of IROL is that it is a limit that, if exceeded, "could" lead to instability..... IROLs are no more than measure points to be used in monitoring the system. Any actions taken or directed by a reliability authority must be prudent based on the actual situation and system conditions and with the goal of maintaining reliability not only for the immediate time period but for the entire operational planning time period as well.

The standard has been revised to add the phrase, 'without delay' to indicate that actions should be taken ASAP.

- **Add a requirement to Implement Conservative Operations for Unknown or Unstudied Conditions**  
**Wisconsin Energy Corporation - PM WEC**

Exceeding an IROL is a indicator of a potentially catastrophic event, in addition to the above, the RA should also be required to act by implementing "conservative operations" for conditions that are unknown or not studied and that do not have a defined IROL.

Requiring that system operators take actions when their system is in an unanalyzed state is beyond the scope of this standard.

- **Add a requirement to document RA's Authority**

**Public Service Electric and Gas Company (LSEs)**

There must be an express provision stating that Reliability Authorities have authority over all entities with facilities or operating within the RA's footprint. (Section 204)

There is a requirement in the RA Certification Standard that addresses this. That standard requires the RA to have a written agreement with all of the entities that report to the RA as well as with adjacent RAs that defines the authority of the RA.

**Electricity Consumers Resource Council**

We are concerned that the definition or criteria regarding the differentiation between "Local" and "Wide Area Impact" is unclear. The proposed standard does not appear to provide adequate responses if the electric area to be included in the limit is larger than the portion of the transmission system under the authority of a single Reliability Authority (RA). The standard should clearly explain how an RA can order all TO's, BA's, IA's and other RA's to take necessary actions if they are not within the controlling RA's reliability area.

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Requirement 5 – Data Specification and Collection**

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The SDT did not use the terms, ‘wide area impact’ or ‘local area’ in this standard. There is no industry consensus on the definition of these terms. The SDT will request that these terms continue to be refined, but recommends that this refinement take place outside the scope of this standard.

The Coordinate Operations standard addresses the coordination of actions between two RAs. There is a requirement in this standard that requires the entities that work under the direction of an RA to follow that RA’s directives. RA Certification is expected to include requirements that the RA have written agreements with all entities that operate within its physical and/or electrical boundaries. These agreements are expected to address the authority of the RA to direct entities to take actions under normal and abnormal conditions.

**Wisconsin Energy Corporation - PM WEC**

The RA will have several conditions in which it is required to give operating directives to other functional entities, to require those entities to have specific requirements for documenting RA directives related to IROL is confusing. Suggest all directives issued by the RA shall be documented per these measures.

The standard has been revised to add a requirement that the RA include specific language in its directives to let the recipient know that the directive is related to an IROL.

**Reliant Resources Inc RRI**

Sec 204 - There is no definitive authority given to the Reliability Authorities over each and every entity within their footprint. Lack of authority will jeopardize the effectiveness of the requirements within Standard 200 and ultimately the reliability of the Interconnection(s).

RA Certification is expected to include requirements that the RA have written agreements with all entities that operate within its physical and/or electrical boundaries. These agreements are expected to address the authority of the RA to direct entities to take actions under normal and abnormal conditions.

**WECC**

**Minnesota Power MP**

**Public Works Commission Fayetteville PWCF**

**Southern California Edison SCET**

**Salt River Project SRP**

**Tucson Electric Power Company TEPC**

**Platte River Power Authority TP PRPA**

**California Energy Commission**

The standard focuses too much attention on reporting and documentation rather than focusing on the need for operators to take timely and appropriate actions to correct operating limit violations.

Specific language has been added to clarify that actions be taken, “without delay.” While there are minor sanctions for poor documentation, the standard applies larger sanctions for instances of exceeding an IROL for time greater than  $T_v$ , for ignoring RA directives, and for not monitoring.

**Gainesville Regional Utilities GVL (LSEs)**  
**City of Tallahassee TAL (Transmission Owners)**

Who is responsible for implementing an IROL mitigation plan? Transmission Owners? RA? Does the RA develop the plan or does the Transmission Owner?

IROL mitigation plans are under the control of the RA. The RA may direct other entities to take actions as part of one of these plans.

- **Limit documentation to instances of exceeding Tv**

**FirstEnergy Corp**

FirstEnergy does not support documenting all limit violations. We need to be able to document only those violations that are in excess of Tv. Documenting all limit violations would be an effort with no real reward or substantive information.

There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties. There are three reasons for requiring that each instance of exceeding an IROL be documented:

- To ensure that System Operators maintain ‘situational awareness’ of the seriousness of ever exceeding an IROL.
- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.

**FirstEnergy Solutions FESC (LSEs)**

We do not support documenting all limit violations. Only those violations that are in excess of Tv are needed.

There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties. There are three reasons for requiring that each instance of exceeding an IROL be documented:

- To ensure that System Operators maintain ‘situational awareness’ of the seriousness of ever exceeding an IROL.
- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.

**FirstEnergy Solutions FESC (Brokers, Aggregators, and Marketers)**

A standard should be a standard for all RAs. Documenting every limit violation may prove to be burdensome with little impact on reliability.

There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties. There are three reasons for requiring that each instance of exceeding an IROL be documented:

- To ensure that System Operators maintain ‘situational awareness’ of the seriousness of ever exceeding an IROL.

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Requirement 5 – Data Specification and Collection**

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- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.

**MAIN**

Contrasting operator actions versus documentation, the standard is relatively overly focused on documentation. As a specific example of this, Section 204, which addresses "Actions," permits an IROL shorter than  $T_v$  yet still requires documentation of the event (Section 204 (e) (1)). The documentation required by this standard is so burdensome that it risks system operations could become distracted from its primary role of acting on IROL's.

There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties. There are three reasons for requiring that each instance of exceeding an IROL be documented:

- To ensure that System Operators maintain 'situational awareness' of the seriousness of ever exceeding an IROL.
- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.

**NPCC**

**New York Power Authority MED**

**Northeast Utilities NU**

**LIPA LIPA (Transmission Owners)**

Documentation should be required only for those limit violations in excess of the time-duration  $T_v$  value.

There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties. There are three reasons for requiring that each instance of exceeding an IROL be documented:

- To ensure that System Operators maintain 'situational awareness' of the seriousness of ever exceeding an IROL.
- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.

**ISO New England Inc ISNE**

ISO-NE does not support documenting all limit violations, but only those in excess of the time-duration  $T_v$  value. This requirement would be a large effort while providing little or no information, as limits are exceeded for very small amounts of time and magnitude just by virtue of normal power system operations.

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Requirement 5 – Data Specification and Collection**

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There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties. There are three reasons for requiring that each instance of exceeding an IROL be documented:

- To ensure that System Operators maintain ‘situational awareness’ of the seriousness of ever exceeding an IROL.
- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.

**National Grid USA**

**New Brunswick Power Corporation NBPC**

**New York Power Authority MED**

**Northeast Utilities NU**

**Nova Scotia Power NSPI**

**Ontario - Independent Electricity Market Operator IMO**

National Grid (NPCC) further does not support documenting all limit violations, but only those in excess of the time-duration Tv value. This requirement would be a huge effort while providing little or no information, as limits are exceeded for very small amounts of time on a regular basis just by virtue of power system operations.

There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties.

**Hydro One Networks Inc (LSEs)**

We further only support recording limit violations, but documenting and reporting only those in excess of the time-duration TV value. Reporting all limit violations would be a huge effort while providing little or no compliance information, as limits are exceeded for very small amounts of time on a regular basis just by virtue of power system operations.

There should be very few IROL violations of any duration. The documentation required is that which is typically recorded by system operators in the normal course of duties.

There are three reasons for requiring that each instance of exceeding an IROL be documented:

- To ensure that System Operators maintain ‘situational awareness’ of the seriousness of ever exceeding an IROL.
- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.



- **Report 'near misses' to Region**

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

**Georgia Power Company (LSEs)**

Although the standard states that all instances of exceeding IROLs must be documented (reference excerpt from the definitions below), they are not required to be sent to NERC or the Regions. These “near miss” situations (where the IROL is mitigated in under Tv) contain valuable information and should be reported as well. By tracking these near misses, the compliance monitor can determine how close to the edge the system is being operated. Analysis of this data could indicate that Tv is being used as a grace period, which is in direct conflict with the OLDTF’s recommendations and good utility practice . However, there does not appear to be a compliance “hammer” to prevent entities from using Tv as a grace period. This should somehow be incorporated into the levels of non-compliance and penalties. Southern recommends that near misses be reported to the Region.

There are three reasons for requiring that each instance of exceeding an IROL be documented. Any Region that wants to collect this data is free to do so, and may either handle this with a Regional Difference to this standard, or through a separate Regional requirement.

- To ensure that System Operators maintain ‘situational awareness’ of the seriousness of ever exceeding an IROL.
- To ensure that there is sufficient documentation to support an audit of whether actions are being taken to mitigate instances of exceeding an IROL.
- To ensure that the information on exceeding IROLs is available when needed by NERC and/or Regions for reliability analyses.

- **Question on No Overt Action**

**City of Tallahassee TAL**

footnote- How can we allow 'no overt action' for an expected IROL violation. By 207.a.1 the RA "shall have an action plan to prevent..." If he has to have a plan, how can we allow "no overt action"?

Although this standard requires the RA to have a plan, this standard does not require that the plan be followed because real-time conditions often do not duplicate the conditions that were anticipated when a plan was developed. If a limit is being approached, but the RA knows that it will be relieved before it is exceeded (for example if a unit is coming on line in the next 5 minutes) then the RA may take “no overt action”. Note that if the RA elects to take “no overt action” the RA is required to document this decision so that the decision can be reviewed.

- **Include Time to Respond to Directives**

**Avista Corp. AVA**

**Avista Corp. Washington Water Power Division AVWP**

The standard does not address a time frame in which a response to a directive is required. In order for the standard to be affective there must be a time frame developed to monitor proper response.

**Responses to Operate within IROLs Standard Ballot**  
***Comments on Requirement 5 – Data Specification and Collection***

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The RA may include a time constraint in its directive, but this is not required. There are many instances where an RA may issue a directive with a time constraint such as, 'as soon as possible' – and this is not measurable. The RA is responsible for achieving the desired results.

**Sanctions**

Summary Consideration: The sanction for exceeding an IROL for time greater than  $T_v$  was modified so that it is proportional to the magnitude and duration of the event and is not tied to the size of any entity.

**(f) Sanctions**  
 Level four noncompliance sanctions shall be the greater of the fixed dollar sanctions listed in the matrix, or the ~~number of megawatts above the Interconnection Reliability Operating Limit multiplied by the dollar value for the number of times of noncompliance.~~ dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table:

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

### **Southeastern Electric Reliability Council**

Once  $T_v$  is violated there needs to be an incentive to get it back within limits soon. As currently written, the standard does not distinguish between short and long  $T_v$  violations.

The emphasis of this standard is different from that of Policy 2. Policy 2 focuses solely on actions after a limit has been exceeded. This standard puts much more emphasis on preventing instances of exceeding IROLs.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident.

### **Georgia Power Company (LSEs)**

Southern believes that the time an IROL is exceeded should be considered in levels of non-compliance or penalties. Once  $T_v$  is violated, there needs to be an incentive to get it back within limits sooner rather than later. As currently written, the standard does not distinguish between violations that last for  $T_v + 5$  minutes vs.  $T_v + 5$  hours.

Because  $T_v$  isn't standard for all IROLs, using the duration of time that a limit is exceeded can't be applied in a 'fair' manner. Changes were made to the standard to set a max for  $T_v$  of 30 minutes. We don't want to encourage RAs to set  $T_v$  at 30 minutes for all limits just to avoid penalties. There were several balloters who suggested that the magnitude of the sanction be proportional to the magnitude and duration of exceeding the limit, and the SDT made this modification.

### **Carolina Power & Light Company CPL (Transmission Owners)**

#### **Carolina Power & Light Company CPL (LSEs)**

#### **Carolina Power & Light Company CPL (Generators)**

The time an IROL is exceeded should be considered in levels of non-compliance or penalties. Once  $T_v$  is violated, there needs to be an incentive to get it back within limits sooner rather than later. As currently written, the standard does not distinguish between violations that last for  $T_v + 5$  minutes vs.  $T_v + 5$  hours.

Because  $T_v$  isn't standard for all IROLs, using the duration of time that a limit is exceeded can't be applied in a 'fair' manner. Changes were made to the standard to set a max for  $T_v$  of 30 minutes. We don't want to encourage RAs to set  $T_v$  at 30 minutes for all limits just to avoid penalties. There were several balloters who suggested that the magnitude of the sanction be proportional to the magnitude and duration of exceeding the limit, and the SDT made this modification.

### **Kansas City Power & Light KCPL**

Is 30 seconds too short of a time for a reset duration for  $T_v$ ?

The thirty seconds was selected because it represented the longest period of time that could be associated with a 'bad scan'. The SDT contacted the balloter to determine what value the balloter suggests would be sufficient, and the balloter suggested one minute. This is what will be proposed to the industry. We will ask the industry for feedback on whether 30 seconds is too short a period of time and will offer 'one minute' as a suggested alternative.

## **MAIN**

Once the violation comes back within limits the standard states the event is over within 30 seconds. This is too soon,- it should be a longer period, perhaps 10 minutes.

The thirty seconds was selected because it represented the longest period of time that could be associated with a 'bad scan'. We will ask the industry for feedback on whether 30 seconds is too short a period of time and will offer 10 minutes as a suggested alternative.

### **Avista Corp. AVA**

#### **Avista Corp. Washington Water Power Division AVWP**

The sanctions need to be set up based on % overload not MW overload. Under the proposed standard a 10 MW overload on a 10,000 MW path will have the same sanction as a 10 MW overload on a 100 MW path.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident.

### **Wisconsin Public Service Corporation WPS**

Penalty matrix should be based upon the % of line capacity violation versus megawatt exceedence.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident.

### **Bonneville Power Administration Transmission BPAT**

In Section 204.f (Actions/Sanctions) there should be a clear definition of the megawatt value used to calculate the sanctions. Is the megawatt value the maximum value the IROL is exceeded, the megawatt value the IROL is exceeded at time  $T_v$ , or an average value of the IROL violation over the  $T_v$  period? We recommend that the MW violation be based on an average MW percentage of the violation of the IROL over the time period that exceeds  $T_v$ .

We would also like to see a time component added in calculating the sanctions. The time component would add motivation to alleviate a violation instead of letting a small violation continue for a long period of time. An example of a time component would the severity of the violation would double if the time of the reportable IROL violation exceeded  $T_v$  such that the IROL has been exceeded for  $2T_v$ .

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident.

The maximum value used for the sanction is the maximum value during the time period after  $T_v$  was exceeded.

### **AEP Service Corp -- Transmission System AEP**

Sanctions are defined on a per MW basis for violations of operating limits but a more realistic approach would be to base them on percentage violations. Ten MWs on a 115 kV facility is probably more critical than 10 MW on a 500 kV facility although the 500 kV facility may be more critical for interconnection reliability.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident.

### **City Water Light & Power CWLP**

Also, in the penalty matrix, the violations should not be based on actual MW, but be based on the percent of the facility rating. For example, being 20 MW over the rating of a 100 MW rated facility is a lot worse than being 20 MW over a 1000 MW rated facility.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident. The dollar amount used as the multiplier is a fixed dollar amount and is not related to the size of any entity or any entity's facility.

### **City of Tallahassee TAL**

If a  $T_v$  is set to zero due to the high risk, and that IROL is exceeded due to "acts of god" or circumstances beyond the entities control, the offending party is subject to sanctions, or having this event count against them, if their Special Protection Scheme fails.

This is correct. However, this standard's primary focus is on preventing any incident of exceeding an IORL. IROLs should not be exceeded.

### **Gainesville Regional Utilities GVL (Generators)**

I also believe that the sanction matrix should be clarified. Is it \$ per mw over IROL Limit, or \$ per Mw for facility. I agree with a % over IROL that exceeds 30 minutes may have sanctions levied. But I must reiterate clarify the Sanction matrix.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident. The dollar amount used as the multiplier is a fixed dollar amount and is not related to the size of any entity or any entity's facility.

### **Kansas City Power & Light KCPL**

The per MW basis for violations is inappropriate, a percentage basis is mor realistic.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident. The dollar amount used as the multiplier is a fixed dollar amount and is not related to the size of any entity or any entity's facility.

### **Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

#### **Manitoba Hydro MHEB (LSEs)**

#### **Manitoba Hydro (Transmission Owners)**

Depending on the final definition of an IROL (in accordance with standard 600, or to avoid cascading, instability and uncontrolled separation), it may be essential to consider the extent of the violation (i.e., was the limit exceeded by 1% or 200 %?). If the IROL definition remains

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unchanged then it is very likely that even minimal violations are serious and, as well, that  $T_v$  may have to be very small.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident. The dollar amount used as the multiplier is a fixed dollar amount and is not related to the size of any entity or any entity's facility.

**Allegheny Power AP**

Financial sanctions may be less effective than desired when the structure of the Reliability Authority (RTO) allows for the penalty to be passed on to others.

Addressing this concern is outside the scope of the SDT.

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

Southern believes that the time an IROL is exceeded should be considered in levels of non-compliance or penalties. Once  $T_v$  is violated, there needs to be an incentive to get it back within limits sooner rather than later. As currently written, the standard does not distinguish between violations that last for  $T_v + 5$  minutes vs.  $T_v + 5$  hours.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident.

**MAIN**

The penalty matrix should be based upon the % of line capacity violation versus the megawatt excess.

The sanctions for this requirement have been revised so that fines for exceeding IROLs for time greater than  $T_v$  are proportional to the magnitude and duration of the incident. The dollar amount used as the multiplier is a fixed dollar amount and is not related to the size of any entity or any entity's facility.

- **Other Comments**

**WECC**

**Minnesota Power MP**

**Public Works Commission Fayetteville PWCF**

**Southern California Edison SCET**

**Salt River Project SRP**

**Tucson Electric Power Company TEPC**

**Platte River Power Authority TP PRPA**

**California Energy Commission**

The proposed standard will be difficult and impractical to enforce. The standard adds an enforcement burden of proof in that one would have to demonstrate that the violation of the limit "could lead to instability, uncontrolled separation, or cascading outages" for the actual operating conditions which existed. As such there may have to be a technical study conducted almost every time a limit is exceeded to assess each reported potential OWL violation to demonstrate the violation

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would or would not have resulted in cascading for that particular operating point. We do not believe it is practical to expect that a study be run representing the system conditions in effect at the time for each operating limit violation to assess whether the consequences would make the violation reportable.

None of the compliance monitoring processes in this standard include asking that the RA conduct a post-mortem technical study. IROLs are established prior to an event occurring and shall be enforceable in real-time. System Operators must operate so that they don't exceed identified IROLs – its not helpful to identify IROLs after-the-fact.

The SOLs that are identified as IROLs must be developed following Standard 600. Under Standard 600, studies are conducted to identify the SOLs as well as the consequences of violating one of these limits. Studies are not required to be conducted after an IROL has been identified and this standard does not require that any entity demonstrate 'after the fact' that a limit was/was not an IROL.

Whether or not existing system conditions match the conditions studied for the original identification of the IROL, the IROL is still an IROL as far as the system operators are concerned. The IROL remains an IROL until the system operators are informed differently.



## **205 Data Specification and Collection**

### **Requirements**

#### (a) Requirements

(1) The Reliability Authority shall specify and collect the data it needs to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits. The Reliability Authority shall collect this data from the entities performing functions that have **real-time** Facilities monitored by the Reliability Authority, and from entities that provide Facility status to the Reliability Authority. This includes specifying and collecting data from the following:

- (i) Balancing Authorities
- (ii) Generator Owners
- (iii) Generator Operators
- (iv) Load-serving Entities
- (v) Reliability Authorities
- (vi) Transmission Operators
- (vii) Transmission Owners

#### **Summary Consideration:**

The requirement was modified to add the adjective, 'real-time' to the term Facilities. This change was requested by a balloter to improve the consistency between Requirements 205 and 206.

#### **Tenaska Inc**

Data requirements in Section 205 need to be more specific to prevent burdensome, discriminatory requests for data. Also, the data request should only be for reliability information and not for competitive cost information. Section 208 should be applicable to anyone who has the ability to impact reliability on the bulk system (transmission owners, transmission operators, generators, load serving entities, etc.). It appears that Section 201 gives tremendous latitude for the reliability authorities to pick and choose what facilities are included which could lead to discriminatory practices. Some more specific language should be added to identify what facilities are in or out.

The requirement is limited to data needed to support reliability. Requiring that all RAs have a common data specification would not be in the best interests of reliability, since some RAs may have a justified need for more data than other RAs.

Regarding Section 208: The entities listed as needing to provide data are those entities that are defined in the Functional Model as needing to provide data to the RA for monitoring and analyses. Other entities may provide data to the RA for other purposes, but that is outside the scope of this standard.

Regarding Section 201: The RA needs the latitude to identify which Facilities it needs to monitor.

### **Bonneville Power Administration Transmission BPAT**

Sections 205 and 206 both deal with “data”. Only in Section 205.b.3 is “status” mentioned. To perform a real time analysis requires both “data” and “status”. We recommend removing “status” from Section 205.b.3 with the understanding that “data” includes “status”.

The standard has been revised to include the phrase “and real-time Facility status” in both Requirements 205 and 206.

### **AEP Service Corp -- Transmission System AEP** **Oklahoma Gas and Electric OKGE**

Requirements (a)(i), (a)(ii) and (a)(iii) are too open-ended on the part of the reliability authority. Justification should be required for all requested data to prevent unreasonable and burdensome requests on the part of the reliability authority. The data requested and the timing of the delivery of the data should be mutually agreeable to the reliability authority and the responding entity.

The standard should include a minimum, default set of data, such as that spelled out in Appendix 4B, and provide that as a guide for types of data that may be requested.

The requirement is limited to data needed to support reliability. Requiring that all RAs have a common data specification would not be in the best interests of reliability, since some RAs may have a justified need for more data than other RAs.

Requirement (a)(iii) appears to be repeated again as a measure in Measure (b)(iii). Shouldn't Requirement (a)(iii) be moved to Standard 206 since it deals with provision of the data?

In fact, there is a great deal of material in 205 that is related data provision. Shouldn't all of this be moved to 206? Perhaps additional clarification between 205 and 206 is all that is needed.

These requirements are closely linked – Requirement 205 requires that the RA develop a data specification to let entities know what data it needs – Requirement 206 requires that those entities provide the data as requested.

206(e) Only one data point out of potentially thousands of points could cause non-compliance as specified in (e). This implies that nothing less than 100% of the data, 100% of the time is sufficient. Is this the intent of the standard? Is a transducer failure in a remote substation as damaging to reliability of the interconnection as the loss of an entire ICCP link between a responding entity and its reliability authority? Is a failure for one scan cycle as critical as that point not being available for days or weeks? It would appear that non-compliance associated with this standard needs revisiting.

When this standard is re-posted for comment, please provide a sample that the industry can review. The standard has been written so that the RA isn't required to ‘turn in’ the names of entities that are non-compliant for a single piece of data. The standard was written so that the RA has an opportunity to resolve any lack of data with the entity responsible and only report instances where there are blatant violations.

### **Kansas City Power & Light KCPL**

Requirements are to open ended. Establish a minimum and let RA justify additional.

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The requirement is limited to data needed to support reliability. Requiring that all RAs have a common data specification would not be in the best interests of reliability, since some RAs may have a justified need for more data than other RAs.

## **Levels of Non-compliance**

### **AEP Service Corp -- Transmission System AEP Oklahoma Gas and Electric OKGE**

There appears to be inconsistency between non-compliance in 205 and 206. If a reliability authority makes an unreasonable data request in 205 and doesn't get the requested data within the specified timeframe, then the reliability authority is only penalized at a level one. But if a responding entity loses one data point for one four-second data scan, that responding entity is blasted with a level four penalty. There does not appear to be equity here.

The SDT suggested different sanctions for not having a data spec and for not providing data as requested. Here is the SDT's reasoning for the different levels of non-compliance:

The data specification does need to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.

The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.

If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.

## **206 Data Provision**

### **Levels of Non-compliance**

#### **Kansas City Power & Light KCPL**

Is missing one data point as severe as an entire ICCP link being down?

As envisioned, the RA would use common sense upon the loss of a single data point for a single scan or even multiple scans, and wouldn't report that to its Compliance Monitor, therefore there would be no associated sanction.

#### **AEP Service Corp -- Transmission System AEP Oklahoma Gas and Electric OKGE**

There appears to be inconsistency between non-compliance in 205 and 206. If a reliability authority makes an unreasonable data request in 205 and doesn't get the requested data within the specified timeframe, then the reliability authority is only penalized at a level one. But if a responding entity loses one data point for one four-second data scan, that responding entity is blasted with a level four penalty. There does not appear to be equity here.

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The data specification does need to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.

The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.

If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.

#### **Ontario Power Generation Inc OPG**

SECTION 206:

This section identifies levels of non-compliance and in this case, the only applicable level is level 4, which appears to be unnecessarily harsh.

If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.

**Ontario Power Generation Inc OPG**

SECTION 206:

Entities obliged to provide data to RAs under this section of the Standard should have a means of appealing the decision of the RA on the grounds of relevance.

There is a dispute resolution process that could be used to resolve any difference.

## Sanctions

### City of Tallahassee TAL

Under the Sanctions - Fixed Dollars: In reference to the last line; "If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome." Why is there ANY penalty if a best guess was a little off?

The sentence you've referenced is from the Sanctions Table that is part of the Compliance Enforcement Program approved by the NERC Board. The referenced sentence has been taken out of context – it was written in reference to planning standards, not operations-related standards. The set of paragraphs that explain the rationale for using flat fines and dollars per MW sanctions are as follows:

#### Fixed Dollars

This sanction is used when a letter is not enough and a stronger message is desired. Fixed dollars are typically assigned as a one-time fine that is ideal for measures involving planning-related standards. Many planning actions use forward-looking assumptions. If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome."

#### Dollars per MW

Dollars per MW sanctions are oriented toward operationally based standards. The MW can be load, generation, or flow on a line. Reasonableness of a sanction needs to be figured into assessing \$/MW penalties. Assessing large financial penalties is not the goal, but sending a message with proper emphasis on \$\$\$ can be controlled with the multiplier.

Because the requirement to follow the RA's directives isn't always tied to a certain number of MW, the SDT drafted this standard with "Fixed Dollar" sanctions rather than "Dollars per MW" sanctions.

## **207 Action Plan**

### **Requirements**

#### **207 Action Plan Processes, Procedures or Plans for Preventing and Mitigating IROLs**

##### **(a) Requirements**

- (1) The Reliability Authority shall have ~~an action plan~~ a process, procedure or plan that identifies actions it shall take or actions it shall direct others to take, to prevent ~~or~~ and mitigate instances of exceeding its Interconnection Reliability Operating Limits.

#### **Summary Consideration:**

This requirement was modified to change the word, 'plan' to the phrase, 'process, procedure or plan'. This change aligns the language used in this standard with the language used in the Certification SARs and the Coordinate Operations standard. The word, 'or' was changed to 'and' to clarify that the documents must address Both prevention And mitigation of instances of exceeding IROLs.

- **Add Requirement for an action plan for conservative operations**

#### **Wisconsin Energy Corporation - PM WEC**

Exceeding an IROL is a indicator of a potentially catastrophic event, in addition to the above, the RA should also be required to have an action plan for implementing "conservative operations" for conditions that are unknown or not studied and that do not have a defined IROL.

Requiring that system operators take actions when their system is in an unanalyzed state is beyond the scope of this standard.

- **Require alternatives to curtailments of mkt transactions – comments to reference NAESB practices**

#### **Reliant Resources Inc RRI**

NERC should include in Standard 200, the obligation for operators (RAs) to include as part of its "Action Plan" to mitigate violations to the Interconnected Reliability Operating Limits, procedures that allow transmission customers alternatives to curtailment of market transactions. Such alternative procedures should be referenced in the Action Plans and specific procedures can be provided through another forum, NAESB, that could develop interconnection wide or regional based procedures to enable redispatch or other alternatives to traditional "TLR-type" transaction curtailment.

The Standard does not require nor does it preclude the use of any specific solutions in preventing or mitigating instances of exceeding IROLs.

#### **Reliant Resources Inc RRI**

The problem with NERC Std 200 is that it only requires a "Action Plan" to be in place to mitigate system overloads. Instead, what Standard 200 should do is recognize that RAs have many means to reduce system overloads that can keep as many transactions in place as possible.



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**Comments on Requirement 207 – Processes, Procedures or Plans**

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The Standard requires processes, procedures or plans to Prevent instances of exceeding IROLs as well as action plans for Mitigating instances of exceeding IROLs. These processes, procedures or plans don't require nor do they preclude the use of any specific solution.

**Reliant Resources Inc RRI**

The way Std 200 is now written; an RA may have as a procedure - e.g. - a load shedding scheme, or bi-lateral transaction curtailment scheme (NERC TLR) to fulfill the NERC Standard 200 requirement for an Action Plan. Neither one of these solutions should be allowed as a first action procedure. By incorporating market procedures through reference in the Action Plan, RAs will be incentivized to utilize other procedures that strive to retain market transactions through the use of financial mechanisms rather than cut them as a first action means to get out of system operating limit violations.

The Standard requires processes, procedures or plans to Prevent instances of exceeding IROLs as well as action plans for Mitigating instances of exceeding IROLs. These processes, procedures or plans don't require nor do they preclude the use of any specific solution.

Adding constraints to the RA's options may limit their ability to protect reliability.

**Ontario Power Generation Inc OPG**

This section identifies the need for RAs to have an action plan for dealing with the exceedances of IROLs. However, such a plan can have substantial commercial implications and the Standard provides no guideline for defining the plan or the mechanism by which a proposed plan can be challenged or modified to mitigate the commercial impacts. OPG believes the most appropriate approach would be to develop plan(s) through NAESB, for adoption by RAs, prior to implementation of this NERC standard.

These processes, procedures or plans are for support of interconnection reliability, they aren't designed to be used to mitigate commercial impacts. NERC is responsible for development of reliability-related standards.

**Reliant Resources Inc RRI**

Sec 207 appears to be the replacement for the current TLR process detailed in NERC Operating Policy Appendix 9C1. References to NAESB or other market based procedures to "unwind" market transactions should be required. NAESB is currently struggling to scope out the needs for a commercial standard to complement the NERC Standard 200. Communication within the appropriate working levels in both the NERC and NAESB forums is required for efficient standards development.

The Standard requires processes, procedures or plans to Prevent instances of exceeding IROLs as well as action plans for Mitigating instances of exceeding IROLs. These processes, procedures or plans don't require nor do they preclude the use of any specific solution.

Adding constraints to the RA's options may limit their ability to protect reliability.

- **Require consistent Action Plans between RAs**

**Reliant Resources Inc RRI**

Sec 207 - There is no requirement for "Action Plans" to be commercially seamless between Regions or RTOs. Although commercial concerns are NOT within NERC's purview, there is no

**Responses to Operate within IROLs Standard Ballot**  
**Comments on Requirement 207 – Processes, Procedures or Plans**

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acknowledgement that consistent Action Plans between RAs should be implemented where needed, i.e.- within the same interconnection and/or market to ensure seamless operations.

These processes, procedures or plans are for support of interconnection reliability, they aren't designed to be used to mitigate commercial impacts. There is another standard, "Coordinate Operations" that requires RAs to agree to action plans that require cooperation between two or more RAs.

**Electricity Consumers Resource Council**

There is no requirement for commercially seamless Action Plans between Regions or RTOs. The Standard should, at least, recognize that consistent Action Plans may have either reliability or commercial implications.

These processes, procedures or plans are for support of interconnection reliability, they aren't designed to be used to mitigate commercial impacts. There is another standard, "Coordinate Operations" that requires RAs to agree to action plans that require cooperation between two or more RAs. *(Note that the Functional Model doesn't recognize RTOs, so this standard is for RAs.)*

- **Require RAs to implement Action Plans**

**Public Service Electric and Gas Company (LSEs)**

**PSEG Energy Resources & Trade LLC PS**

**PSEG Power LLC**

The RAs should be required to carry out their Action Plan reliability responsibilities in such a manner to ensure seamless operations and markets within their footprints and that of interconnected RAs. (Section 207)

There is no requirement that RAs follow their processes, procedures or plans – this recognizes that the real-time conditions may not match the studied conditions.

These processes, procedures or plans are for support of interconnection reliability, they aren't designed to be used to ensure seamless commercial markets. There is another standard, "Coordinate Operations" that requires RAs to agree to action plans that require cooperation between two or more RAs.

**Measures**

**(b) Measures**

- (1) The Reliability Authority shall have one or more a-documented ~~action plan~~ processes, procedures or plans that addresses- both preventing and mitigating instances of exceeding Interconnection Reliability Operating Limits. The ~~plan~~ processes, procedures or plans shall identify and be coordinated with those entities responsible for taking actions acting and with those entities impacted by such actions.

• **Clarify Action Plan Expectations**

**NPCC**

**New York Power Authority MED**

**Northeast Utilities NU**

**LIPA LIPA (Transmission Owners)**

The Action Plans referred to in Section 207 need to be flexible and allow latitude in operator actions

Agreed. There is no requirement that the RA follow its processes, procedures or plans – this recognizes that the real-time conditions may not match the study conditions.

**Northeast Utilities NU**

The Standards also needs to clarify the expectations of Section 207. Does Section 207 allow for high level guides/guidelines coupled with highly trained operators to make the proper and timely decision(s) or does it require the existence of a step-by-step procedure for each possible contingency.

The standard was modified to indicate that Action Plans could be processes, procedures or plans. These are all 'defined' terms. Each entity may develop a process, procedure or plan, or any combination of these types of documents.

**National Grid USA**

**New Brunswick Power Corporation NBPC**

**New York Power Authority NYPA**

**New York Power Authority MED**

**Northeast Utilities NU**

**Nova Scotia Power NSPI**

**Ontario - Independent Electricity Market Operator IMO**

**ISO New England Inc ISNE**

Section 207, Action Plan. It is National Grid's (NPCC's) (ISO-NE's) position that requiring an Action Plan and its associated steps and procedures for dealing with instances of IROL violations will prove to be restrictive and disallow operators from taking other positive actions than those as outlined in a "plan." National Grid feels that confining operators to a set of steps for an IROL violation may, at face value appear to be laudable, however may not be in the best interest of correcting the IROL violation for the specific set of system conditions that may exist.

Note that although the standard requires RAs to have these documents, the standard does not require RAs to follow these plans. This recognizes that the real-time conditions may not match the study conditions.

**City of Lakeland PLKT**

Action plans referenced in part 207 not sufficiently defined, ie; plan for what, every possible contingency ? subsets ?

The processes, procedures or plans addressed in this requirement need to be developed to suit the individual RA's needs.

**Gainsville Regional Utilities GVL (LSEs)**  
**City of Tallahassee TAL (Transmission Owners)**

The Reliability Authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its Interconnection Reliability Operating Limits. From this it looks like the RA will work with the owner to develop the action plans, but from the non-compliance levels an action plan could be developed without input. What good is this if the RA can't perform the mitigation? Seems very broad and burdensome to the RA. How detailed do the plans have to be? This could be very work intensive if detailed plans have to be documented for every single contingency. Is it alright if the action plan is to work with the facility owner to develop and/or implement mitigating plans? 204 already required that actions be taken. Why is there a need to document every possible action to take? Seems like 204 is the real key to protect reliability, not to keep piles of what it scenarios.

The measures indicate that the documents must identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions.

The documents need to be detailed enough so that the RA knows what actions to take/direct others to take under the studied conditions.

The levels of non-compliance are assigned to the RA because the RA is ultimately responsible for ensuring that these documents are developed and in place so that entities know what actions to take.

Real-time conditions don't always match the studied conditions – for this reason, there is no requirement that the RA follow its plans.

Each RA may make the documents as detailed as necessary to suit its needs. If the RA has new system operators with little operating experience and/or an operating system with known weaknesses, then very detailed documents may be needed. If the RA has a very experienced staff and a very 'robust' operating system, the documents may not need to be as detailed.

## **208 Reliability Authority Directives**

### **Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

#### **Manitoba Hydro MHEB (LSEs)**

#### **Manitoba Hydro (Transmission Owners)**

Standard 208 presumes legal agreements have been put in place to allow the reliability authority to demand actions. We have identified a risk that the presumption of the superiority of the Reliability Authority could have significant safety implications if knowledge of local conditions requires contrary actions to protect equipment or personnel. This risk should be dealt with in these legal documents.

The Reliability Authority Certification Standard includes criteria for the agreements that must be in place defining the Reliability Authority's authority to direct other entities to take actions.

### **Requirements**

#### **City of Tallahassee TAL**

The standard does not specify that another RA has to following the directives of an adjacent RA, such as SERC/FRCC border or interface issues.

This standard does not require one RA to follow the directives of another RA. Under the Functional Model, all RAs are created 'equal' – no RA has more authority than another RA. There is another standard, "Coordinate Operations," that includes requirements for RAs to work together when an operating situation requires the actions of more than one RA.

#### **Gainsville Regional Utilities GVL (LSEs)**

#### **City of Tallahassee TAL (Transmission Owners)**

The standard does not address seams issues. It does not allow the RA to give direction to an entity outside the designated RA area. This is very important regardless if the RA is an entity such as TEC or if the RA is more of the Security (Reliability) Coordinator entity.

Under the Functional Model, issues between Reliability Authority Areas are addressed between the RAs. The Coordination of RA activities is addressed in the Coordinate Operations Standard. The Coordinate Operations standard includes requirements that RAs work together and agree to take certain actions under a range of conditions.

#### **AEP Service Corp -- Transmission System AEP**

Generator operators need to be added to the entities listed.

Under the Functional Model, the RA does not give directions to the Generator Operators. Under the Functional Model, the RA directs the Balancing Authority and the Balancing Authority directs the Generator Operator. The Functional Model (page 12 – under Real-time Relationships that the Reliability Authority has with other 'functions:')

Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities.

The Functional Model (page 18 – under Real-time Relationships that the Balancing Authority has with other ‘functions:’

Directs resources (Generator Operators and Load-Serving Entities) to take action to ensure balance in real time.

## **Measures**

### **(b) Measures**

- (1) The responsible entity shall have evidence that it received and followed the Reliability Authority’s directives. ~~and shall document the directives and actions taken to meet the directives.~~
- (2) The responsible entity shall have document via an operations log or other data source, with the following information recorded for each directive it receives relative to an Interconnection Reliability Operating Limit:
  - (i) Date and time of directive received
  - (ii) Directive ~~issued-received~~
  - (iii) Actions taken in response to directive

### **AEP Service Corp -- Transmission System AEP**

Requirement (a)(ii) is repeated again in Measure (b)(i).

The measures have been revised so they read more like measures and less like requirements.

## **Levels of Non-compliance**

### **Gainsville Regional Utilities GVL (LSEs)**

#### **City of Tallahassee TAL (Transmission Owners)**

Levels of Non-Compliance - Level four: The responsible entity did not follow the Reliability Authority’s directives. If an entity does not follow the RA directive, will the RA have the ability to take action/implement the mitigation plan? If not, other than a financial penalty, it doesn’t look like there is any way to make entities comply and reliability can be jeopardized.

If an entity doesn’t comply with the RA’s directives, then the RA needs to take other actions to preserve the reliability of the Interconnection, up to and including shedding load.

### **AEP Service Corp -- Transmission System AEP**

The levels of non-compliance need to be reviewed to ensure that they accurately reflect how well the directives were followed. Timing of actions taken with regards to when the directives were issued should also be considered.

There is a wide range of possible RA directives – in some scenarios, the RA may direct an entity to take actions within a critical timeframe – in other scenarios, the RA may contact an entity and

**Responses to Operate within IROLs Standard Ballot**  
***Comments on Requirement 208 – RA Directives***

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ask that entity how long it would take to achieve a specific goal. If you have specific suggestions, please submit them when this standard is re-posted for comment.

## Sanctions

### City of Tallahassee TAL

Under the Sanctions - Fixed Dollars: In reference to the last line; "If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome." Why is there ANY penalty if a best guess was a little off?

The sentence you've referenced is from the Sanctions Table that is part of the Compliance Enforcement Program approved by the NERC Board. The referenced sentence has been taken out of context – it was written in reference to planning standards, not operations-related standards. The set of paragraphs that explain the rationale for using flat fines and dollars per MW sanctions are as follows:

#### Fixed Dollars

This sanction is used when a letter is not enough and a stronger message is desired. Fixed dollars are typically assigned as a one-time fine that is ideal for measures involving planning-related standards. Many planning actions use forward-looking assumptions. If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome."

#### Dollars per MW

Dollars per MW sanctions are oriented toward operationally based standards. The MW can be load, generation, or flow on a line. Reasonableness of a sanction needs to be figured into assessing \$/MW penalties. Assessing large financial penalties is not the goal, but sending a message with proper emphasis on \$\$\$ can be controlled with the multiplier.

Because the requirement to follow the RA's directives isn't always tied to a certain number of MW, the SDT drafted this standard with "Fixed Dollar" sanctions rather than "Dollars per MW" sanctions.



## **Other Comments on Standard**

- **Standard Needs Clarity, General Changes**

### **Alabama Electric Cooperative AEC**

The entire standard is too ambiguous and does little to clear up the OSL- OSLV confusion that has lingered for years.

The definition of Cascading Outages has been refined to try to bring more clarity to this standard.

Under the revised definitions, a cascading outage is the uncontrolled successive loss of system elements triggered by an incident at any location which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

### **American Transmission Company LLC ATC**

The standard is not precise enough in defining where it should be applied. More specifically, the standard asks Reliability Authorities to designate facilities to be subject to IROL's, as distinct from SOL's, presumably on the basis of potential "Wide Area Impact," but the meaning of "Wide Area" remains an open question. For example, it remains undetermined whether the largest city or even some multi-state regions would meet the definition of "Wide Area."

The definitions of Cascading Outages and Bulk Electric System have been refined to try to bring more clarity to this standard. The term, 'wide area impact' is not used in this standard, and has been removed from the terms used in the definition of 'cascading outages'. The new definitions provide specific criteria that should allow entities to determine which of their facilities are subject to IROLs.

Under the revised definitions, a cascading outage is the uncontrolled successive loss of system elements triggered by an incident at any location which results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

### **JEA JEA (LSEs)**

#### **JEA JEA (Generators)**

JEA supports the concepts of this standard, but is voting no because JEA believes the proposed standard in its present form needs more work clarification prior to implementation by the industry.

This comment is not specific enough to provide the SDT with guidance on what needs to be modified.

### **MAIN**

On the surface this standard seems like this is a "no-brainer" except that put into writing it is now too vague and leaves too much room for interpretation.

This comment is not specific enough to provide the SDT with guidance on what needs to be modified.

**New York State Public Service Commission**

The webcast discussion regarding this proposed standard indicated several outstanding issues that should be addressed by the standard drafting committee.

This comment is not specific enough to provide the SDT with guidance on what needs to be modified.

**Aquila, Inc. (Transmission Owners)**

This standard seems to lack industry consensus and needs further development before Aquila could vote yes.

This comment is not specific enough to provide the SDT with guidance on what needs to be modified.

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

The Requirements, Measurements, and Levels of Non-compliance are not well linked throughout the standard. It appears that the majority of comments to place the standard in good, logical format were ignored.

The SDT addressed each comment submitted on each posting of this standard. The format used in this standard is a template that was developed under the guidance of NERC's General Counsel.

**Gainsville Regional Utilities GVL (LSEs)**

**City of Tallahassee TAL (Transmission Owners)**

201 - 208

Compliance Monitoring Process – There are some inconsistencies in this area. It is indicated that the self-certification is submitted to the Compliance Monitor annually and the Performance-reset period is 12 months from the last violation. Do these match? What does it really mean? Do violations “rack-up” for 12 months? What if there is at least one violation each month? In addition to the time constraints, there should be evidence that the list of facilities subject to IROLS and the list of IROLS are supposed were updated. Does this mean keeping revisions for a certain time period?

There is no mis-match between the self-certification and the Performance-reset period. Although self-certification occurs annually, there are other mechanisms for reviewing compliance during the course of a year. The Compliance Monitor could review performance as part of a routine audit, or as part of a triggered investigation. If an entity has non-compliant performance, the reset period won't re-start until that entity has gone 12 months without an incident of non-compliant performance.

**January 2006 – TOP**

**Kansas City Power & Light KCPL**

The levels of compliance sections in these standards should be revised to use all the levels to take into account severity and reasonableness.

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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Some requirements lend themselves to using all levels of non-compliance, and the SDT attempted to put in as many levels of non-compliance as practical. This is a very critical standard, and the requirements are critical to reliability.

**American Transmission Company LLC ATC**

Contrasting operator actions versus documentation, the standard is relatively overly focused on documentation. As a specific example of this, Section 204, which addresses "Actions," permits an IROL shorter than Tv yet still requires documentation of the event (Section 204 (e) (1)). The documentation required by this standard is so burdensome that it risks system operations could become distracted from its primary role of acting on IROL's.

The documentation required in this standard is typically the same documentation made by system operators performing real-time tasks.

- **Wait for Field Testing**

**Western Area Power Administration - CM WACM**

It is suggested that this standard be placed through a field test prior to implementation and enforcement. The Operating Limit Definition Task Force has had a field test in place for the last 6 months which yielded zero violation reports. They are in the process of reviewing the reasons for this extreme drop in reporting, and will discuss those findings at the March NERC Operating Committee meeting. I suggest that this standard would benefit in a similar manner

The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

**United States Bureau of Reclamation**

Finally the standard has not been tested in a pilot situation to assess how it may operate in practice.

The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

**Pacific Gas & Electric Company PGEU (Electric Generators)**

Implementation should address:

Field-testing to identify deficiencies due to oversight. Experience with the WECC RMS has shown that technical violations of a deficient standard impose unnecessary sanctions and/or many hours to prepare responses explaining actions. This imposes an undo burden on industry that has no practical benefit for improving reliability.

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

**American Transmission Company LLC ATC**

This standard should be field tested before implementation, considering the magnitude of the standard's scope, resource requirements, and potentially adverse impact to reliability.

The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

**California Energy Commission**

The standard has not been field-tested. Experience with the WECC Reliability Management System (RMS) has demonstrated that much can be learned from field tests to verify that the standard requirements are measurable and enforceable. Results from analysis of field tests should be used to refine the standard before it is implemented and enforced.

The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

**MAIN**

There is substantial agreement with one of the WECC concerns about the application of the standard without first testing the provisions of the standard. The concept of a technical study to determine a fix when a limit is exceeded is good. However, it may be impractical to run such a study representing the system conditions in effect at the time of each operating limit violation to assess the consequences to determine if it is a reportable violation. The operator should be concentrating on fixing the problem.

This standard has not been field-tested. Experience has demonstrated that much can be learned from field tests to verify that the standard requirements are measurable and enforceable. Results from analysis of field tests should be used to refine/verify the standard before it is implemented and enforced.

This standard should be field tested before implementation, considering the magnitude of the standard's scope, resource requirements, and potentially adverse impact to reliability

None of the compliance monitoring processes in this standard include asking that the RA conduct a post-mortem technical study. IROLs are established prior to an event occurring and shall be enforceable in real-time. System Operators must operate so that they don't exceed identified IROLs – its not helpful to identify IROLs after-the-fact.

The SOLs that are identified as IROLs must be developed following Standard 600. Under Standard 600, studies are conducted to identify the SOLs as well as the consequences of violating one of these limits. Studies are not required to be conducted after an IROL has been identified

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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and this standard does not require that any entity demonstrate 'after the fact' that a limit was/was not an IROL.

Whether or not existing system conditions match the conditions studied for the original identification of the IROL, the IROL is still an IROL as far as the system operators are concerned. The IROL remains an IROL until the system operators are informed differently.

The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

**WECC**

**Minnesota Power MP**

**Public Works Commission Fayetteville PWCF**

**Southern California Edison SCET**

**Salt River Project SRP**

**Tucson Electric Power Company TEPC**

**Platte River Power Authority TP PRPA**

The standard has not been field-tested. Our experience (with the WECC Reliability Management System – RMS) has demonstrated that much can be learned from field tests to verify that the standard requirements are measurable and enforceable. Results from analysis of field tests should be used to refine the standard before it is implemented and enforced.

The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

**Wisconsin Public Service Corporation WPS**

This standard has not been field-tested. Results from analysis of field tests should be used to refine/verify the standard before it is implemented and enforced.

The determination on whether to conduct field testing is made by the Standards Authorization Committee (SAC). The Director-Compliance makes a recommendation to the SAC and the SAC makes the final determination. The Standards Drafting Team does not have a role in the determination of whether to conduct Field Testing .

- ***Implementation Plan – Fix Date on page 1 of Standard***

**City of Lakeland PLKT**

The Q&A document states the Operate Within IROL standard can't be implemented until after the Determine Facility Ratings System Operating Limits and Transfer Capabilities standard is implemented.

The effective date on the cover page of the standard has been revised to conform with the date in the Implementation Plan. It now states that the standard will become effective three months from

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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the date the NERC BOT votes to adopt the standard, but that compliance with the standard will be delayed until after the Determine Facility Ratings Standard has been implemented.

**Duke Power DUKE (Electric Generators)**

**Duke Power DUKE (LSEs)**

**Duke Power DUKE (Transmission Owners)**

The “Effective Date” as defined by this Standard is inconsistent with the associated Implementation Plan. Further, to predicate the implementation of one Standard on another, yet undeveloped Standard, creates unreasonable uncertainty as to the intended implementation and applicability of this Standard.

The effective date on the cover page of the standard has been revised to conform with the date in the Implementation Plan. It now states that the standard will become effective three months from the date the NERC BOT votes to adopt the standard, but that compliance with the standard will be delayed until after the Determine Facility Ratings Standard has been implemented.

The set of standards currently under development has many inter-relationships. We are attempting to complete the standards in a sequence that makes the adoption and implementation logical to the industry – however because each standard is being developed subject to industry input, the actual completion date of any specific standard is impossible to predict.

**Electricity Consumers Resource Council**

The “Questions and Answers About the Operate Within IROLs Standard” states that the Operate Within Limits Standard cannot be implemented until AFTER the Determine Facility Ratings, System Operating limits and Transfer Capabilities Standard has been implemented. Yet, the Effective Date of this Standard is the first day of the month following NERC Board approval. This conflict must be resolved.

The effective date on the cover page of the standard has been revised to conform with the date in the Implementation Plan. It now states that the standard will become effective three months from the date the NERC BOT votes to adopt the standard, but that compliance with the standard will be delayed until after the Determine Facility Ratings Standard has been implemented.

**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

There are a confusing number of dates associated with the standard - these are the “Effective Date”, the “Implementation Date” and the “Compliance Date” – only one of which is defined in the standard (“Effective Date”). These should be better explained and clarified in the preamble of the standard.

The effective date on the cover page of the standard has been revised to conform with the date in the Implementation Plan. It now states that the standard will become effective three months from the date the NERC BOT votes to adopt the standard, but that compliance with the standard will be delayed until after the Determine Facility Ratings Standard has been implemented.

**WECC**

**Minnesota Power MP**  
**Public Works Commission Fayetteville PWCF**  
**Southern California Edison SCET**  
**Salt River Project SRP**  
**Tucson Electric Power Company TEPC**  
**Platte River Power Authority TP PRPA**  
**California Energy Commission**

The document “Questions and Answers About the Operate Within IROLs Standard” states that: “Several things must be in place before entities are expected to come into full compliance with all of the requirements of this standard. Most importantly, the Operate Within IROLs Standard can’t be implemented until after the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard has been implemented.” However, the Effective Date section on page 3 indicates that “This standard will become effective on the first day of the month following the month that the NERC Board of Trustees adopts the standard.” These two statements appear to contradict each other.

The effective date on the cover page of the standard has been revised to conform with the date in the Implementation Plan. It now states that the standard will become effective three months from the date the NERC BOT votes to adopt the standard, but that compliance with the standard will be delayed until after the Determine Facility Ratings Standard has been implemented.

**American Transmission Company LLC ATC**  
**MAIN**

Before this standard can be implemented, the "Determine Facility Ratings, System Operating Limits and Transfer Capabilities" standard must be implemented. However, the effective date of this standard has been set without regard for the effective date of the "Determine Facility Ratings" standard.

The effective date on the cover page of the standard has been revised to conform with the date in the Implementation Plan. It now states that the standard will become effective three months from the date the NERC BOT votes to adopt the standard, but that compliance with the standard will be delayed until after the Determine Facility Ratings Standard has been implemented.

- ***Other Comments on Implementation Plan***

**Consumers Energy CETR (TDUs)**

Consumers Energy is also concerned that the implementation provisions of this standard does not allow for adequate time for development and training of personnel before compliance is mandated.

The implementation plan provided shows that entities would have 9-15 months beyond the date of BOT Adoption to come into compliance with the requirements in this standard. Most of the measures in the standard are only minor modifications to what is currently being done – extensive training should not be required.

**ISO New England Inc ISNE**

While ISO New England generally agrees with a quick implementation of the final approved Standard, there is a large amount of specific data that must be collected and stored to meet the full

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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intent of the Standard. Depending upon what the final approved Standard is, this may require additional software and business processes to fully implement. For this reason we believe that an implementation plan must provide a development period for the responsible entities to fully implement the standard.

The implementation plan, page 15 included the following chart. This chart shows that entities would have several months or more to come into full compliance with this standard. The justification for the delay in compliance with each of the measures is provided in pages 16-23 of the Implementation Plan.

Requirement	Implementation Date	Compliance Date
<b>201 - IROL Identification</b>	3 months from BOT adoption	6 months from implementation of Requirement 604
202 – Monitoring	3 months from BOT adoption	6 months from implementation of Requirement 604
203 - Analyses and Assessments	3 months from BOT adoption	6 months from implementation of Requirement 604
204 - Actions	3 months from BOT adoption	6 months from implementation of Requirement 604
205 – Data Specification & Collection	3 months from BOT adoption	9 months from implementation of Requirement 604
206 – Data Provision	3 months from BOT adoption	12 months from implementation of Requirement 604
207 – Action Plan	3 months from BOT adoption	6 months from implementation of Requirement 604
208 – Reliability Authority Directives	3 months from BOT adoption	9 months from implementation of Requirement 604

**Cinergy Corporation CIN**

Prior to implementation, NERC should not generically assign the responsibilities of the Standard to those currently providing the functions, it should require each Control Area to identify the entity responsible for performing the function of the RA for its Control Area and then require the RA to confirm that responsibility.

Implementing this suggestion is outside the scope of the SDT. Your suggestion was forwarded to the Director-Standards for consideration in the development of the Standards Transition Plan.

**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**



**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

It is not clear what is the legal standing of the implementation plan; should not this plan be part of the standard itself, so as to be documented, fixed and enforceable?

The members of a standard's Ballot Pool vote to accept the definitions, the standard, the standard's compliance elements and the standard's implementation plan. From ANSI's perspective, the standard is limited to the Requirements and Measures.

If a standard is approved by a Ballot Pool, the Implementation Plan is submitted to the NERC Board of Trustees for its adoption. (Note that the BOT votes to 'adopt' the standard, the definitions, the compliance elements and the implementation plan.) If the implementation plan is adopted and indicates that sections of existing Operating Policies or Planning Standards should be retired, then the Standing Committees will respect the BOT decision and will 'retire' the identified documents as designated in the implementation plan. Similarly, if the approved Implementation Plan indicates that compliance won't be effective until 6 months after the date of the BOT adoption, then those dates would be respected by the Compliance Enforcement Program.

- **Function Responsible & Functional Model Implementation**

**Gainsville Regional Utilities GVL (LSEs)**

**City of Tallahassee TAL (Transmission Owners)**

As previously mentioned, Applicability continues to be an issue. In addition, the inclusion of the Functional Model in the standard implies that the standards will need to be updated every time the functional model changes. This comment also applies to the Implementation Plan.

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC's current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC's vision of control areas is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model's tasks and relationships remain virtually the same as they were in the original version. The addition of separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. But to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

Most of the changes in the Functional Model have been 'format' changes and not content changes. However, as the industry changes, it is possible that the Functional Model will continue to be updated and it is possible that some of the standards will need to be revised to conform with these changes. The alternative is to draft standards without addressing which entities would need to comply with those standards – that's where we are today. Some entities are performing as Control Areas, but many other entities are no longer operating as a Control Area, and there is great confusion as to which entities are responsible for the existing Operating Policies.

**Avista Corp. AVA**

**Avista Corp. Washington Water Power Division AVWP**

The standard puts the responsibility on the RA instead of the path operator. Under the functional model these may be separate entities. The transmission owner and/or path operator should be responsible for maintaining flows within Interconnection Reliability Operating Limits (IROL) not the RA. Combining too much responsibility under the RA will lead to reduced reliability not increased reliability. The transmission owner and/or path operator should not wait for a directive from the RA before taking action. The standard puts another layer between the operation of the path and the reliability of the system.

It is important to keep in mind that a given entity may serve more than one Function.

In its simplest form, a transmission owner may operate only one facility. The Functional Model is designed to address standards at that level. In such an environment, that operator has a very narrow perspective of the transmission system. IROLs can and do go beyond the loading of a single facility. Although the single-facility operator does know how much its *facility* can handle, it may not know how much the *system* can handle – and more to the point the single-facility operator does not have the ability to do anything about such overloads (except to open the facility – which may or may not solve the problem).

A Transmission Operator that is also responsible for the control of its inter-area tie flows would serve two roles: one as the transmission operator and the other as a Balancing Authority – and therefore be subject to both the Balancing Authorities' and the Transmission Operators' standards. A large Transmission owner may serve three or more roles, e.g. it could also serve as Reliability Authority and a Balancing Authority.

The standard does put the responsibility on the RA. Under the Functional Model, only one 'function' is responsible for any one requirement. Thus – either the RA or the TOP must be responsible for ensuring that IROLs aren't exceeded. The Functional Model provides the following explanation on pages 12-13:

The Reliability Authority's purview must be broad enough to enable it to calculate Interconnection Reliability Operating Limits, which may be based on the operating parameters of other transmission systems beyond the Transmission Operator's vision. The Transmission Operator is responsible for the reliability of its "local" transmission system, and may not be aware that its system is violating an Interconnection Reliability Operating Limit. Therefore, the Reliability Authority may direct the Transmission Operators or Balancing Authorities to take action to mitigate Interconnection Reliability Operating Limits.

The Functional Model does allow the RA to 'delegate' some of its tasks, thus it is possible for an RA to delegate the task of monitoring an IROL to one of its TOPs.

Under the Functional Model, the TOP is not responsible for IROLs – under the Functional Model the TOP is responsible for controlling its portion of the transmission system so that system operating limits aren't exceeded. The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Avista Corp. AVA (Transmission Owners)**

**Avista Corp. Washington Water Power Division AVWP (Generators)**

The implementation date is too soon. The standard relies on the role of the Reliability Authority and another standard (Determine Facility Ratings, System Operating Limits and Transfer Capabilities) both of which are still being drafted. The RA functions need to be clearly defined and approved before implementing this standard.

The RA function is defined in the Functional Model - and the Functional Model was approved by the NERC Board of Trustees. Most of the changes to the approved version of the Functional Model are 'format' changes rather than 'content' changes. Waiting for 'final' approval of the revised version of the Functional Model is not practical, since the Functional Model may continue to need to be changed to conform with industry changes that are mandated by entities such as FERC.

**City of Lakeland PLKT**

STD implies the RA has more authority and power to act than what the Functional Model describes

Under the Functional Model, the RA has the authority to direct other entities to take reliability-related actions and other entities are required to act in compliance with those directives. Here are some excerpts from the Functional Model:

Requirement	Quotes from Functional Model (pages 11-13)
Identify IROLs	Calculates Interconnection Reliability Operating Limits based on Transmission Owners' and Generator Owners' specified equipment ratings.
Monitor	Monitor all reliability-related parameters within the Reliability Authority Area, including generation dispatch and transmission maintenance plans
Conduct Analyses	Perform reliability analysis (actual and contingency) for the Reliability Authority Area
Actions	Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities.
Data Specification & Collection	Receives facility and operational data from Generator Operators, Load-Serving Entities, Transmission Owners, Generator Owners, Transmission Operators, Distribution Providers.  Receives real-time operational information from Balancing Authority and Transmission Operator for monitoring.
Data Provision	(Supporting requirement for data specification requirement)
Action Plans	(Supporting requirement for actions requirement)
RA Directives	(Supporting requirement for actions requirement)

**Southern Company Services SOCO (Generators)**  
**Southern Company Services SOCO (Transmission Owners)**  
**Georgia Power Company (LSEs)**

The functional model is used in the standards even before it is finalized. This could be an issue.

The Functional Model was and is designed to be the basis for writing the new Reliability Standards. The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC's current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC's vision of control areas is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model's tasks and relationships remain virtually the same as they were in the original version. The addition of separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. But to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

**Duke Power DUKE (Electric Generators)**  
**Duke Power DUKE (LSEs)**  
**Duke Power DUKE (Transmission Owners)**

The "Applicability" of this Standard to existing entities performing various system functions, as defined in the functional model, prior to the identification and certification of those entities creates unjust confusion and uncertainty as to responsibility and accountability. In this interim period, this creates more uncertainty as to who is responsible and moves the industry to a less defined state.

This is a problem without any single simple solution. The Certification Standards need to ensure that entities applying for certification have the documents and tools in place needed to meet the performance standards – but the performance standards haven't been finalized. The performance Standards need to be developed assuming that entities have met all the criteria in the Certification Standards – but the Certification Standards haven't been finalized. The NERC Board of Trustees has asked the Drafting Teams to move ahead with the development of standards, and that is what we are trying to do. There may need to be some minor changes to both the Certification Standards and these performance standards once all the standards are developed – but having one process wait for the other doesn't seem like a viable solution that will aid the industry in putting into place a set of standards that will support reliability.

**Duke Power DUKE (Electric Generators)**  
**Duke Power DUKE (LSEs)**  
**Duke Power DUKE (Transmission Owners)**

Is this language intended to preclude CAs from having direct ISN and directly sharing operational data? In the current state, this has become an acceptable approach to ISN data exchange.

This standard doesn't reference the ISN, therefore it neither requires nor precludes an entity from having access to and using the ISN for data exchange.

### **Duke Power DUKE (Electric Generators)**

#### **Duke Power DUKE (LSEs)**

#### **Duke Power DUKE (Transmission Owners)**

This Standard appears to be much more prescriptive concerning the responsibility of the RA with respect to the current state of the Reliability Coordinators – specifically with respect to the issues concerning “delegation” of responsibilities and the incumbent utility’s statutory obligations to serve.

The new standards are intended to be more specific than existing Operating Policies in describing required measures of what constitutes good performance. However the new standards are also less ‘prescriptive’ because the new standards provide fewer details on ‘how’ to achieve the required performance.

This standard does give the RA clear authority to direct the actions of entities performing support functions within its Reliability Authority Area. This concept is in support of the Functional Model.

### **East Kentucky Power Cooperative EKPC**

Although the importance of this standard and the excellent work up to this point is recognized, until the relationships and responsibilities of existing Control Areas, Reliability Coordinators, etc. as they will be defined for entities in the new Functional Model are understood, who will need to comply and how they will comply are unclear. Additionally, this standard relies on Facility Ratings and Operating Limits that are yet undefined in another new standard. Approval of this IROL standard at this time is premature. The others need to come first.

The Functional Model contains an explanation of the Reliability Authority and tries to explain the relationship between the RA (a set of tasks to perform) and the Reliability Coordinator (one type of entity that may perform the duties of an RA). Each entity must decide if it wants to be an RA, and any entity that wants to be an RA must then complete the RA Certification process.

### **City of Lakeland PLKT**

The understanding of the functional model needs to be improved. The RA described in the standard is not active today. The functional model needs to have final approval and be implemented.

The RA tasks defined in the Functional Model are being carried out today, and in that sense there are active RAs today. The difficulty is that the entities carrying out those tasks have differing corporate structures – some are control areas, some are ISOs, and some are Reliability Coordinators.

The Functional Model was approved by the NERC Board of Trustees in June, 2001. There are revisions to the Functional Model that are under consideration, but these revisions primarily address ‘format’ and not ‘content’ issues. The Standing Committees approved Version 2 of the Functional Model in November, 2003. The Functional Model may continue to undergo changes to conform to changes in the industry. While this is not ideal, there is nothing the Standards Development Team can do about this reality. Waiting until the Functional Model is ‘finished’ could mean that we may never have a set of reliability standards that is clear enough to support

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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the industry's needs. The NERC Board of Trustees has asked the Drafting Teams to move ahead with the development of standards, and that is what we are trying to do.

**City of Lakeland PLKT**

Voting on Standards should not take place until Functional Model completely finished and final version approved by BOT.

The Functional Model was approved by the NERC Board of Trustees in June, 2001. There are revisions to the Functional Model that are under consideration, but these revisions primary address 'format' and not 'content' issues. The Standing Committees approved Version 2 of the Functional Model in November, 2003. The Functional Model may continue to undergo changes to conform to changes in the industry. While this is not ideal, there is nothing the Standards Development Team can do about this reality. Waiting until the Functional Model is 'finished' could mean that we may never have a set of reliability standards that is clear enough to support the industry's needs. The NERC Board of Trustees has asked the Drafting Teams to move ahead with the development of standards, and that is what we are trying to do.

**City of Lakeland PLKT**

The Functional Model needs to be completed and approved before Standards.

The Functional Model was approved by the NERC Board of Trustees in June, 2001. There are revisions to the Functional Model that are under consideration, but these revisions primary address 'format' and not 'content' issues. The Standing Committees approved Version 2 of the Functional Model in November, 2003. The Functional Model may continue to undergo changes to conform to changes in the industry. While this is not ideal, there is nothing the Standards Development Team can do about this reality. Waiting until the Functional Model is 'finished' could mean that we may never have a set of reliability standards that is clear enough to support the industry's needs. The NERC Board of Trustees has asked the Drafting Teams to move ahead with the development of standards, and that is what we are trying to do.

**Exelon Energy Delivery EED - PECO & ComEd (LSEs)**

**Exelon Generation Company LLC EXGN**

Based on information passed on in the OWL web cast, there is confusion on what entity assumes responsibility as Reliability Authority (based on the functional model). The industry should not pursue this Standard until all entities clearly understand accountability and responsibility associated with this Standard.

The Functional Model contains a description of the responsibilities of the RA. Some entities are having difficulty trying to determine if they want to assume responsibility of the RA or the TOP. Each entity must make these decisions for itself. The Functional Model was approved by the NERC Board of Trustees in June, 2001. There are revisions to the Functional Model that are under consideration, but these revisions primary address 'format' and not 'content' issues. The Standing Committees approved Version 2 of the Functional Model in November, 2003. The Functional Model may continue to undergo changes to conform to changes in the industry. While this is not ideal, there is nothing the Standards Development Team can do about this reality. Waiting until the Functional Model is 'finished' could mean that we may never have a set of reliability standards that is clear enough to support the industry's needs. The NERC Board of Trustees has asked the Drafting Teams to move ahead with the development of standards, and that is what we are trying to do.

**Gainesville Regional Utilities GVL (LSEs)**  
**City of Tallahassee TAL (Transmission Owners)**

The question of which entities will be a RA is very critical to considering this standard. If for example, FPL, PEF, TEC or others are all RA's the definition of local area and widespread all have a different view. The standard appears to be written with the RA as a similar entity as the existing Reliability Coordinator. Basically an overseer monitoring a designated area for reliability. The RA as defined in the Functional Model Version 2 does not seem to fit the standard.

To the extent that a Reliability Coordinator does (or is responsible for) all of the tasks defined for an RA, those Reliability Coordinators can be RAs. To the extent that vertically integrated utilities do (or are responsible for) all of those tasks then those utilities may be RAs. The Functional Model defines tasks not corporate structure.

This standard does assume that the entity performing the RA function will have a 'wide area' view and reliability oversight similar to that defined for today's Reliability Coordinators. When the SDT drafted this standard, the SDT did assume that the RA 'function' would replace the RC 'function.' The Functional Model Version 2 supports this assumption. The Functional Model Technical Reference (page 38) includes the following section that addresses the confusion between the RA and the RC:

“When the Control Area Criteria Task Force (the FMRTG's predecessor) began developing the Functional Model in 1999, it assumed that the Reliability Authority would perform the role of the Reliability Coordinator. The Task Force picked a different term because the RC was specifically defined in relation to control areas, and not BAs, Transmission Operators, Generators, and so on. Indeed, the tasks that comprise the Reliability Authority function align closely with those of today's Reliability Coordinator, though the Model does not include the degree of detail found in the Reliability Coordinator criteria in the Operating Manual.”

**Gainesville Regional Utilities GVL (Generators)**

It is not clear as to which individual entities are the reliability authority. Is it each regional Security Coordinator or a Control Area within a security region. This needs clarification.

To the extent that a Reliability Coordinator does (or is responsible for) all of the tasks defined for an RA, those Reliability Coordinators can be RAs. To the extent that vertically integrated utilities do (or are responsible for) all of those tasks then those utilities may be RAs. The Functional Model defines tasks not corporate structure.

While each entity must decide if it wants to become a Reliability Authority, in most cases the Security Coordinator (now called the Reliability Coordinator) can transition to become a Reliability Authority. In some cases, a Control Area may become a Reliability Authority. Each entity must make these decisions for itself, giving consideration to whether it wants to assume the associated responsibilities and giving consideration to the resources required to meet the associated RA Certification standard.

**LG&E Energy Transmission Services LGEE**

We do not believe the concept of a Reliability Authority has been sufficiently defined and needs clarification before we know what we are voting on.

We are concerned about a lack of clarity on exactly who the "Reliability Authority" is that would

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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perform this function, especially in light of RTO roles and the proposed NERC functional model definitions.

Each balloter is asked to vote on what is in the standard presented to them - nothing more or less. To the extent that the standard depends on another as yet not fully defined standard requires the balloter to be involved in the process and comment on what should and what should not be in the standard. NERC Director-Standards is responsible for ensuring that ad hoc expectations between standards are effected.

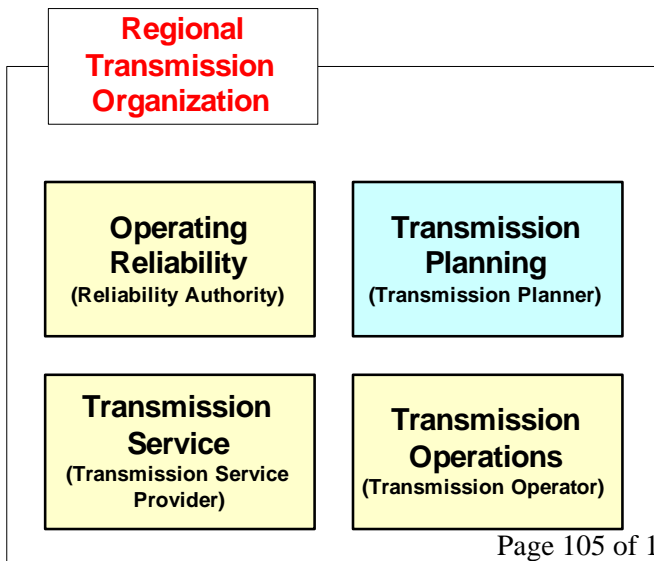
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**Louisville Gas & Electric LGE (LSEs)**

Further detail is required in this SAR to define who is the "Reliability Authority" relative to ISOs/RTOs and the proposed NERC functional model of the different entities functioning in the industry. Otherwise a good standard, but who bears the cost of implementation and execution to achieve the improvement in reliability?

Each balloter is asked to vote on what is in the standard presented to them - nothing more or less. To the extent that the standard depends on another as yet not fully defined standard requires the balloter to be involved in the process and comment on what should and what should not be in the standard. NERC Director-Standards is responsible for ensuring that ad hoc expectations between standards are effected.

The Functional Model contains a description of the responsibilities of the RA. Some entities are having difficulty trying to determine if they want to assume responsibility of the RA or the TOP. Each entity must make these decisions for itself. In some cases, such as in the case of an RTO,

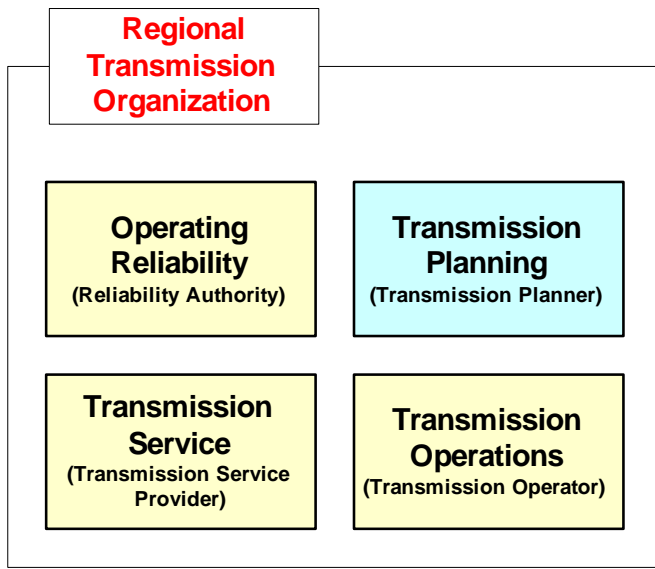


one entity may perform several functions. This is a diagram from the Functional Model Technical Document. It shows how one RTO may perform several of the functions in the Functional Model. This is not a 'prescription' for all RTOs – each RTO must decide what functions it wants to perform.

The entity that registers and is certified by NERC assumes the responsibilities and costs. Addressing the cost of implementation is outside the scope of the SDT.



**Louisville Gas & Electric LGE (Electric Generators)**



Discussion has generated concern in regards to a lack of clarity on exactly who the "Reliability Authority" will be that performs this function, especially in light of ISO/RTO roles and the proposed NERC functional model definitions.

Each balloter is asked to vote on what is in the standard presented to them - nothing more or less. To the extent that the standard depends on another as yet not fully defined standard requires the balloter to be involved in the process and comment on what should and what should not be in the standard. NERC Director-Standards is responsible for ensuring that ad hoc expectations between standards are

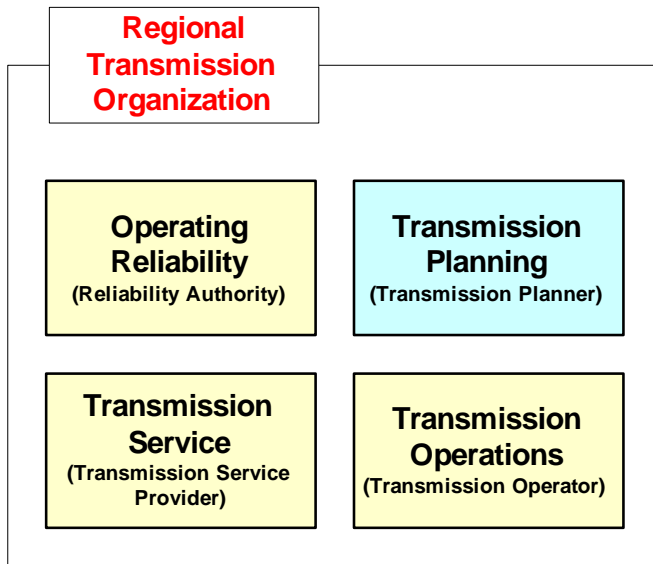
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The Functional Model contains a description of the responsibilities of the RA. Some entities are having difficulty trying to determine if they want to assume responsibility of the RA or the TOP. Each entity must make these decisions for itself. In some cases, such as in the case of an RTO, one entity may perform several functions. This is a diagram from the Functional Model Technical Document. It shows how one RTO may perform several of the functions in the Functional Model. This is not a 'prescription' for all RTOs - each RTO must decide what functions it wants to perform.

### Louisville Gas & Electric LGE (Electricity Brokers, Aggregators, and Marketers)

Concerned about a lack of clarity on exactly who the "Reliability Authority" is that would perform this function, especially in light of RTO roles and the proposed NERC functional model definitions.

Each balloter is asked to vote on what is in the standard presented to them - nothing more or less. To the extent that the standard depends on another as yet not fully defined standard requires the balloter to be involved in the process and comment on what should and what should not be in the standard. NERC Director-Standards is responsible for ensuring that ad hoc expectations between standards are effected.



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### Florida Power & Light FPL

**FRCC**

**JEA JEA (Transmission Owners)**  
**Reedy Creek Improvement District RC (LSEs)**  
**Reedy Creek Improvement District RC (TDUs)**  
**Reedy Creek Improvement District RC (Generators)**  
**Reedy Creek Improvement District Marketing RCM (Brokers)**  
**Seminole Electric Cooperative SEC (TDUs)**  
**Seminole Electric Cooperative SEC (Generators)**  
**Seminole Electric Cooperative SEC (Brokers)**  
**Kissimmee Utility Authority**  
**Orlando Utilities Commission OUCT**  
**Tampa Electric Company TEC (LSEs)**  
**Tampa Electric Company TEC (Brokers)**  
**Carolina Power & Light Company CPL (Transmission Owners)**  
**Carolina Power & Light Company CPL (LSEs)**  
**Carolina Power & Light Company CPL (Generators)**

The understanding of the Reliability Authority is very critical in interpreting this standard. It appears to us that this standard is written with the RA being the entity today that is the Reliability Coordinator. This confusion was discussed on the Web cast conference call, and it was stated by the Chair of the drafting team, that the RA is not the RC of today. The RA in this standard needs “wide area oversight” to perform the requirements of this standard. We have concern, especially with requirement 208, about how a RA (who is not a RC of today) can issue directives to TO’s, BA’s, IA’s and other RA’s if they are not within their reliability area. If the functional model allows an individual CA/TO of today to be a RA tomorrow, it looks like they are giving directives to themselves. So it looks like the RA as defined in version 2 of the functional model does not fit the needs of this standard. That may be more of a problem with interpretation of the functional model than this standard, but until that confusion is cleared up, we have trouble approving this draft.

In the case cited above, the RA is also a BA and a TOP. As such that entity is responsible to effect all of the tasks for the three functions. In that case the RA has the responsibility and would need to ensure that it had the capability to comply with all of those performance requirements.

To the extent that a Reliability Coordinator does (or is responsible for) all of the tasks defined for an RA, those Reliability Coordinators can be RAs. To the extent that vertically integrated utilities do (or are responsible for) all of those tasks then those utilities may be RAs. The Functional Model defines tasks not corporate structure.

As has been shown through the August 14 Blackout Investigation, not all of today’s Reliability Coordinators are created equal. Some of today’s RC’s have wide area monitoring capabilities with clearly defined lines of authority established, but other RC’s don’t have the same capabilities. This standard was written assuming that the RA would perform the duties assigned to the RA in the Functional Model.

This standard does assume that the entity performing the RA function will have a ‘wide area’ view and reliability oversight similar to that defined for today’s Reliability Coordinators. When the SDT drafted this standard, the SDT did assume that the RA ‘function’ would replace the RC ‘function.’ The Functional Model Version 2 supports this assumption. The Functional Model

Technical Reference (page 38) includes the following section that addresses the confusion between the RA and the RC:

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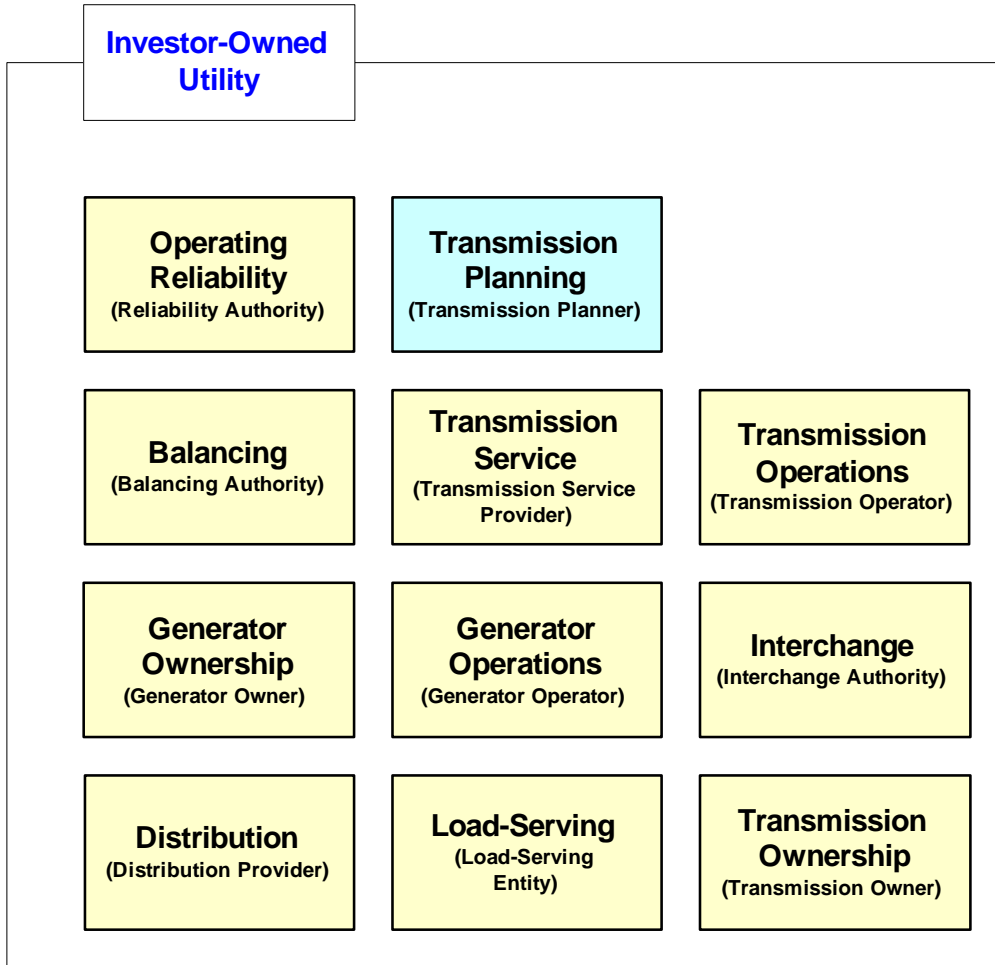
### **Great River Energy GRE**

I also need additional clarification on who is the Reliability Authority. Is this the current Reliability Coordinator or is this still a Control Area function?

To the extent that a Reliability Coordinator does (or is responsible for) all of the tasks defined for an RA, those Reliability Coordinators can be RAs. To the extent that vertically integrated utilities do (or are responsible for) all of those tasks then those utilities may be RAs. The Functional Model defines tasks not corporate structure.

While each entity must decide if it wants to become a Reliability Authority, in most cases the Security Coordinator (now called the Reliability Coordinator) can transition to become a Reliability Authority. In some cases, a Control Area may become a Reliability Authority. Each entity must make these decisions for itself, giving consideration to whether it wants to assume the associated responsibilities and giving consideration to the resources required to meet the associated RA Certification standard.

Some entities will perform several functions, as shown in the “Roll up” examples provided in the Functional Model Technical Discussions document. Here is an example:



**Bonneville Power Administration Transmission BPAT**

It is our understanding that the Reliability Authority can delegate the function of calculating IROLs. If that is true, it would be good to clarify that possibility.

The Functional Model Technical Discussions document includes a discussion about delegating tasks. Duplicating this discussion in each of the standards would be redundant.

**MAIN**

Based on information passed on in the OWL web cast, there is confusion on what entity assumes responsibility as Reliability Authority (based on the Functional Model). The industry should not pursue this Standard until all entities clearly understand accountability and responsibility associated with this Standard.

Who will be the Reliability Authority and the Reliability Coordinator in the new NERC functional model will drive this standard to a revision draft.

To the extent that a Reliability Coordinator does (or is responsible for) all of the tasks defined for an RA, those Reliability Coordinators can be RAs. To the extent that vertically integrated utilities

do (or are responsible for) all of those tasks then those utilities may be RAs. The Functional Model defines tasks not corporate structure.

As has been shown through the August 14 Blackout Investigation, not all of today's Reliability Coordinators are created equal. Some of today's RC's have wide area monitoring capabilities with clearly defined lines of authority established, but other RC's don't have the same capabilities. This standard was written assuming that the RA would perform the duties assigned to the RA in the Functional Model.

This standard does assume that the entity performing the RA function will have a 'wide area' view and reliability oversight similar to that defined for today's Reliability Coordinators. When the SDT drafted this standard, the SDT did assume that the RA 'function' would replace the RC 'function.' The Functional Model Version 2 supports this assumption. The Functional Model Technical Reference (page 38) includes the following section that addresses the confusion between the RA and the RC:

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### **Midwest Independent Transmission System Operator, Inc.**

The industry and the Standard needs to deal with the reality of the existence of Reliability Coordinators and define their role (Based on the informational Webcast, the drafting team's vision is that the RA is the local operator). There currently exists two tiers of control in the grid, local first response from transmission operators and BAs and a higher level-wider area control by Reliability Coordinators.

The Reliability standard defines tasks that must be carried out at various levels. Those responsibilities are defined in the standard. The RA has the responsibility for ensuring reliability is maintained. To the extent that the RA delegates control responsibility among the entities under its purview, that RA is still responsible for the outcome. It is strictly up to that registered RA how to carry out its tasks.

To the extent that a Reliability Coordinator does (or is responsible for) all of the tasks defined for an RA, those Reliability Coordinators can be RAs. To the extent that vertically integrated utilities do (or are responsible for) all of those tasks then those utilities may be RAs. The Functional Model defines tasks not corporate structure.

As has been shown through the August 14 Blackout Investigation, not all of today's Reliability Coordinators are created equal. Some of today's RC's have wide area monitoring capabilities with clearly defined lines of authority established, but other RC's don't have the same capabilities. This standard was written assuming that the RA would perform the duties assigned to the RA in the Functional Model.

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**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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**Minnesota Power MP**

There is lack of role clarity regarding coordination of responsibility (and liability) for IROL’s.

The RA is responsible for ensuring that the Reliability Authority Area under its control is operated so that IROLs are not exceeded. The RA may delegate some of its tasks, but may not delegate the responsibility for accomplishing those tasks.

**Minnesota Power MP**

Also, in the MAPP region, the St. Paul Reliability Authority function currently provides services for MISO members, non-jurisdictional entities and non-MISO entities. Some of the non-jurisdictional entities have had traditional “first responder” responsibilities (Policies 2, 4 and 5) because it has been determined that they are the ones most able to quickly restore the system to a safe state. The roles of all such entities with regard to proposed standard 200 would need to be understood.

As further authority for managing such operations transfers to the Reliability Authority, the accountability and legal liability that should accompany such authority must also be transferred.

The Functional Model contains a description of the responsibilities of the RA. Some entities are having difficulty trying to determine if they want to assume responsibility of the RA or the TOP. Each entity must make these decisions for itself.

The Certification Standards (For the RA, Balancing Authority, IA and TOP Functions) should contain requirements that formal agreements be in place that delineate the RAs authority to direct other entities to take actions to preserve the reliability of the interconnection.

### **Mirant Americas Energy Marketing LP MAEM**

The standard does not identify the Compliance Monitor. Is the RRC the monitor? NERC? Certainly have a problem with a RRC monitoring a RA when it is the same entity (e.g., MAAC/PJM).

The Functional Model Technical Discussion includes the following explanation of the Compliance Monitor:

Today, the Regional Councils are the Compliance Monitors in NERC. The Regional compliance plans are audited by the NERC organization.

In those situations where the Compliance Monitor is also the organization performing a reliability service or operating function (such as a Regional Council that is also the Reliability Authority), then the Compliance Monitor for that function should be a third party that is unaffiliated with that organization.

### **South Carolina Electric & Gas Company SCEG**

This standard assumes that all RAs are large enough to affect the interconnection as a whole. An IROL is defined as a limit that if exceeded could lead to instability, uncontrolled separation, etc... that adversely impacts the reliability of the bulk transmission system. Until all RAs have been determined, there is no way of determining if this requirement is applicable to them. The standard does not address the situation where this requirement is not applicable, and assumes that all RAs will have at least one facility subject to an IROL. This is important because an RA that is small enough can blackout its entire system without causing an uncontrolled separation or blackout for the rest of the interconnection.

The Functional Model does not define "large enough". If the registered entity can perform the tasks, then the entity will be certified as an RA. By definition, the calculation and correction of violations of IROLs is an RA responsibility – it may be a task that the RA delegates to some other entity, but it still is the RA's responsibility.

The Functional Model includes the following description (pages 12-13):

#### **Special Considerations**

The Reliability Authority's purview must be broad enough to enable it to calculate Interconnection Reliability Operating Limits, which may be based on the operating parameters of other transmission systems beyond the Transmission Operator's vision. The Transmission Operator is responsible for the reliability of its "local" transmission system, and may not be aware that its system is violating an Interconnection Reliability Operating Limit. Therefore, the Reliability Authority may direct the Transmission Operators or Balancing Authorities to take action to mitigate Interconnection Reliability Operating Limits.

### **Southeastern Electric Reliability Council**

References to the Functional Model are not current and should be.

The references have been updated as suggested.



- **Concerns About Other Standards**

**Pacific Gas & Electric Company PGEU (Electric Generators)**

This posted Standard 200 will have implementation problems. It defines Interconnection Reliability Operating Limit (IROL) to be “a system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system”. Its supporting documents also state that the IROL is a subset of the System Operating Limits to be determined according to Standard 600 – Determine Facility Ratings, System Operating Limits (SOL), and Transfer Capabilities, now being drafted. Standard 600 requires that the SOL be determined such that, among other things, all Facilities are operating within their applicable thermal, frequency and voltage limits, in addition to avoidance of instability, uncontrolled separation, or cascading. As such, this Standard 200 could be operating to limits different from the requirements set forth in Standard 600. This leaves the Reliability Authority in an untenable position – it would either have to operate to a set of IROLs that would not meet the requirements in Standard 600, or a set of IROLs that are different than required by Standard 200.

IROLs are a subset of SOLs – they aren’t in conflict with one another.

**Avista Corp. AVA (Transmission Owners)**

**Avista Corp. Washington Water Power Division AVWP (Generators)**

The implementation date is too soon. The standard relies on the role of the Reliability Authority and another standard (Determine Facility Ratings, System Operating Limits and Transfer Capabilities) both of which are still being drafted. The RA functions need to be clearly defined and approved before implementing this standard.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

The Functional Model contains a description of the responsibilities of the RA. Some entities are having difficulty trying to determine if they want to assume responsibility of the RA or the TOP. Each entity must make these decisions for itself.

**Florida Power & Light FPL**

**FRCC**

**JEA JEA (Transmission Owners)**

**Reedy Creek Improvement District RC (LSEs)**

**Reedy Creek Improvement District RC (TDUs)**

**Reedy Creek Improvement District RC (Generators)**

**Reedy Creek Improvement District Marketing RCM (Brokers)**

**Seminole Electric Cooperative SEC (TDUs)**

**Seminole Electric Cooperative SEC (Generators)**

**Seminole Electric Cooperative SEC (Brokers)**

**Kissimmee Utility Authority**

**Orlando Utilities Commission OUCT**

**Tampa Electric Company TEC (LSEs)**

**Tampa Electric Company TEC (Brokers)**

The implementation plan states (pg 8) that this standard would not be implemented until after the Determine Facility Ratings standard has been implemented. If this is true, it does not make sense to approve this, especially with outstanding issues, until after the Determine Facility Ratings standard is completed and approved. Also, on the Web cast, when we asked about the ability of the RA to direct other RA's (it is not stated in 208), we were told that the Coordinate Operations Standard would take care of that. Does that mean that this standard is also dependent on the Coordinate Operations standard being in place first?

The implementation date was revised to reflect the same dates provided in the associated Implementation Plan.

These new standards are not 'stand-alone' – there are many inter-dependencies between these standards – and the industry needs to recognize that it will not be practical to 'wait' for one standard to be completed before finalizing another standard. Because these standards are being developed in parallel, rather than in series, the SDTs don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay – and that is what the SDTs are trying to do. If NERC had 20 years to develop a new set of standards, then it would be better to develop the standards 'one at a time' – but NERC doesn't have 20 years to develop a new set of standards.

### **Wisconsin Energy Corporation - PM WEC**

The effective date of the standard should not be before all prerequisites have been met.

The implementation date was revised to reflect the same dates provided in the associated Implementation Plan. The Determine Facility Ratings Standard is expected to be balloted before this standard.

### **Southeastern Electric Reliability Council**

The Standard needs to recognize the link between it and the Determine Facility Ratings Standard. This standard should be delayed until the Determine Facility Ratings Standard has been released for vote.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

### **Pacific Gas & Electric Company PGEU (Electric Generators)**

Implementation should address:

Identification of all related standards that must be in place to be enforceable and clearly state what requirements are in force upon approval of each related standard.

These new standards are not 'stand-alone' – there are many inter-dependencies between these standards – and the industry needs to recognize that it will not be practical to 'wait' for one standard to be completed before finalizing another standard. Because these standards are being developed in parallel, rather than in series, the SDTs don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay – and that is what the SDTs are trying to do. If NERC had 20 years to develop a new set of standards, then it would be better to develop the standards 'one at a time' – but NERC doesn't have 20 years to develop a new set of standards.

### **Gainsville Regional Utilities GVL (LSEs)**

#### **City of Tallahassee TAL (Transmission Owners)**

The information provided in the Q&A document and the Implementation Plan indicates that the Operate within Limits will not be implemented until the Determine Facilities Ratings Standard (STD 600) has been implemented. This leads to the following questions:

Why balloting so early? Shouldn't STD 600 be adopted prior to or in conjunction with the IROL standard?

How do the entities know how to establish IROLs with out determining ratings and limits? In addition, there is no common process for developing an IROL and corresponding Tv. It appears from a review of STD 600 that this has not been covered in either standard.

It is unclear if an IROL event is initiated pre-contingency or post-contingency.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

The first requirement of this standard was revised to add a reference to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The reference states that IROLs are a subset of the System Operating Limits developed under the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard.

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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IROL's are based on system operating limits that are developed based on study criteria identified in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. IROLs are developed based on studies of pre- contingency situations and are updated in real time to address changes in system topology such as a loss of a line or a unit trip

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

**Georgia Power Company (LSEs)**

Standard 200 and the Determine Facility Ratings Standard are inherently strongly linked. However, there is little verbiage in Standard 200 referencing this linkage. In addition, the Determine Facility Ratings Standard is not yet finalized or approved so there is no way to know what will be in the final version. Since many of the underlying principles of Standard 200 relies on the Determine Facility Ratings Standard, the fact that the basis for much of Standard 200 in not approved creates a large unknown. For these reasons, the OPS feels that the Determine Facility Ratings Standard needs to be approved PRIOR to Standard 200.

The first requirement of this standard was revised to add a reference to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The reference states that IROLs are a subset of the System Operating Limits developed under the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

**Cinergy Corporation CIN**

The term IROL and its definition remain confusing and leave room for interpretation. Until the requirements for Standard 600 have been agreed upon by the industry, it is difficult to approve this Standard which remains incomplete until Standard 600 is approved. Standard 600 does not even refer to the term IROL.

The first requirement of this standard was revised to add a reference to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The reference states that IROLs are a subset of the System Operating Limits developed under the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

**City of Lakeland PLKT**

Should not approve until STD 600 has been completed and approved as this STD dependant on 600.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

**Carolina Power & Light Company CPL (Transmission Owners)**  
**Carolina Power & Light Company CPL (LSEs)**  
**Carolina Power & Light Company CPL (Generators)**

The implementation plan states (pg 8) that this standard would not be implemented until after the Determine Facility Ratings standard has been implemented. If this is true, it does not make sense to approve this, especially with outstanding issues, until after the Determine Facility Ratings standard is completed and approved.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

**Pacific Gas & Electric PGAE**

This posted Standard 200 may be confusing to implement. It defines Interconnection Reliability Operating Limit (IROL) to be “a system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system”. Its supporting documents also state that the IROL is a subset of the System Operating Limits to be determined according to Standard 600 – Determine Facility Ratings, System Operating Limits (SOL), and Transfer Capabilities, now being drafted. Standard 600 requires that the SOL be determined such that, among other things, all Facilities are operating within their applicable thermal, frequency and voltage limits, in addition to avoidance of instability, uncontrolled separation, or cascading. As such, this Standard 200 could be operating to limits different from the requirements set forth in Standard 600. This leaves the Reliability Authority in an untenable position – it would either have to operate to a set of IROLs that would not meet the requirements in Standard 600, or a set of IROLs that are different than required by Standard 200.

There is no conflict between these standards. Standard 200 was revised to add the following reference to Standard 600:

Each IROL is developed by following the requirements in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard. Standard 600.

**City of Tallahassee TAL**

IROLs will be defined by the unapproved standard "Determine Facility Ratings...". I would prefer to approve the supporting documents before we approve this document. (Coordinated Operations will be another one that may be needed before this one.) Although the Implementation Plan states Prerequisite Approvals, how can the effective date be the "first day of the month following the month that the NERC Board of Trustees adopts the standard" if the supporting documents are not approved first. It does not specify what are ALL the supporting documents.

These new standards are not ‘stand-alone’ – there are many inter-dependencies between these standards – and the industry needs to recognize that it will not be practical to ‘wait’ for one standard to be completed before finalizing another standard. Because these standards are being developed in parallel, rather than in series, the SDTs don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay – and that is what the SDTs are trying to do. If NERC had 20 years to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ – but NERC doesn’t have 20 years to develop a new set of standards.

**Mirant Americas Energy Marketing LP MAEM**

This standard relies on the development of other standards (such as Std. 600 - Determine Facility Ratings, etc.) before it can be implemented. As such, I don't want to pass a standard that is contingent upon the future development of other standards. Along these same lines of thinking, language in the Effective Date and Applicability sections (page 3 of 22) is at a minimum unclear if not contradictory.

These new standards are not 'stand-alone' – there are many inter-dependencies between these standards – and the industry needs to recognize that it will not be practical to 'wait' for one standard to be completed before finalizing another standard. Because these standards are being developed in parallel, rather than in series, the SDTs don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay – and that is what the SDTs are trying to do. If NERC had 20 years to develop a new set of standards, then it would be better to develop the standards 'one at a time' – but NERC doesn't have 20 years to develop a new set of standards.

The 'effective date' was modified to clarify the contradiction.

**Entergy EES (Transmission Owners)**

**STANDARDS DEVELOPMENT – LACK OF COORDINATION OF RESPONSIBILITIES  
AMONG INDUSTRY ENTITIES**

NERC is in the process of converting its Operating Manual to standards. The development of each standard is being done by separate teams, which will lead to disjoint standards. The two standards should be developed and voted on at the same time to ensure proper coordination - Determine Facility Ratings, Operating Limits and Transfer Capability, and this Operate Within IROL standard.

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard is expected to be balloted before this standard is re-posted for ballot.

These new standards are not 'stand-alone' – there are many inter-dependencies between these standards – and the industry needs to recognize that it will not be practical to 'wait' for one standard to be completed before finalizing another standard. Because these standards are being developed in parallel, rather than in series, the SDTs don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay – and that is what the SDTs are trying to do. If NERC had 20 years to develop a new set of standards, then it would be better to develop the standards 'one at a time' – but NERC doesn't have 20 years to develop a new set of standards.

**WECC**

**Minnesota Power MP**

**Public Works Commission Fayetteville PWCF**

**Southern California Edison SCET**

**Salt River Project SRP**

**Tucson Electric Power Company TEPC**

**Platte River Power Authority TP PRPA**

**California Energy Commission**

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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In our opinion, this standard as written invalidates the ratings, transfer capabilities, and limits established under the draft “Standard 600 – Determine Facility Ratings, System Operating Limits, and Transfer Capabilities” because it only provides for enforcement of “Interconnected Reliability Operating Limits,” which are the limits that, when exceeded, “could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.” The current draft of Standard 600 does not mention “Interconnected Reliability Operating Limits.”

IROLs are a subset of SOLs – they aren’t in conflict with one another. The first requirement of this standard was revised to add a reference to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The reference states that IROLs are a subset of the System Operating Limits developed under the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard.

- **Comments about Scope**

**Minnesota Power MP**

In the MAPP region, the North Dakota and Manitoba to USA flowgates can be constrained by either thermal limits or stability limits. How could proposed standard 200 be approved for the stability attributes of these flowgates, without consideration of how the thermal attributes of these flowgates will be administered?

Thermal limits and stability limits can be IROLs if operating outside of these limits could lead to instability, cascading outages or uncontrolled separation that adversely impacts the interconnection. If operating outside of these limits does not lead to instability, cascading outages or uncontrolled separation, then these limits are not IROLs.

**Idaho Power Company IPCO**

Standard unduly restricts unacceptable operation to cascading outages.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Entergy EES (Transmission Owners)**

**GOOD UTILITY PRACTICE**

This standard ignores the concept of Good Utility Practice. The authors of the standard state:

“There is no common definition for Good Utility Practice – consequently it is not possible to enforce compliance with Good Utility Practice.”

Reliability Authorities must be held accountable to the concept of Good Utility Practice even if there is no common definition. Without adherence to this requirement the industry will continue to slowly spiral down in reliability since those in authority will not be held accountable for their actions. FERC has supplied the industry with a definition of Good Utility Practice, which should be good enough for use in NERC standards. Entergy insists this standard not be approved until this standard includes the requirement that RAs conform to Good Utility Practice, preferably as defined by FERC, and all industry participants be held accountable to it.

**Responses to Operate within IROLs Standard Ballot**  
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The definition of “Good Utility Practice” provided by FERC is very subjective and would not meet the requirements set for NERC Reliability Standards.

FERC’s definition of Good Utility Practice is repeated here:

Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act, to the exclusion of all others, but rather to be a range of acceptable practices, methods, or acts generally accepted in the region. Good Utility Practice shall include, but not be limited to, compliance with Applicable Laws and Regulations, Applicable Standards, the National Electric Safety Code, and the National Electrical Code, as they may be amended from time to time, including the criteria, rules and standards of any successor organizations.

**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

NERC need to make a clear statement as to which entities will be responsible for ensuring operation within all of the System Operating Limits, since violations of these limits can lead to equipment damage and increase the risk of more violations and even IROL violations.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Midwest Independent Transmission System Operator, Inc.**

**Minnesota Power MP**

The only requirement in the standard for Control Areas (BAs) and Transmission Operators is to provide data and follow the direction of the RA (which most people assume is the Reliability Coordinator, but there's not agreement on that). There is no requirement for the TO or BA to take any action (other than wait for the RA to direct them).

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Cinergy Corporation CIN**

Cinergy is concerned that retiring existing policies when this Standard goes into affect may allow certain requirements to “fall through the cracks”. Absent clear designation of who this Standard would apply to prior to certification of the Reliability Functions leaves some questions regarding the authority of the control areas. For instance, retiring policy 5C2 suggests a System Operator for a Control Area no longer has the authority, or possibly the requirement to possess the authority, to take actions in the event of an emergency. Does the Standard prevent other operating entities such as transmission or generation operators from taking necessary action if needed to



**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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prevent damage to facilities due to communication problems with the Reliability Authority or other factors requiring immediate action?

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

Policy 5C2 states the following:

**Requirement 5.C.2 Operator authority and responsibility.** SYSTEM OPERATORS having responsibility for the reliability of the transmission system within a CONTROL AREA, pool, etc. shall be given and shall exercise specific authority to alleviate OPERATING SECURITY LIMIT violations. The authority shall enable the SYSTEM OPERATOR to take timely and appropriate actions including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding load, etc.

One of the challenges currently being addressed by the OLDTF is the lack of a common understanding of what constitutes an OSL. The OLDTF developed a new term, IRL, to replace OSL. IRLs are equivalent to IROLs. Under the Functional Model, only the RA will have responsibility for ensuring operations within IROLs.

This standard doesn't prevent entities from taking actions to control local operating issues.

**Pacific Gas & Electric Company PGEU (Electric Generators)**

As written, this posted Standard 200 is confusing and could degrade system reliability. The stated goal of operating to avoid instability, uncontrolled separation or cascading is too narrow a focus and not good sound operating practice. In truth, the system should be operated within many limitations, such as equipment thermal ratings, generator capability limits, etc. as well as limits for stable power transfer, uncontrolled separation and cascading.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Midwest Independent Transmission System Operator, Inc.**  
**Minnesota Power MP**

As this Standard is intended to do away with much of Policy 2, 4 and 5, there appears to no longer be a requirement for BA-BA (or TO-TO) communication or coordination.

*MP concurs with similar comments submitted by the MISO regarding lack of clarity of coordination responsibilities.*

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

There are other standards being developed that address other aspects of Policy 2, 4, and 5. The team that was tasked with identifying the scope of an initial set of standards elected to start with a 'clean slate'. The team did not look at each Operating Policy to determine which sections should be translated into a new standard – rather the team listed all the tasks that need to be

accomplished to support reliability, and then tried to organize those tasks into logical groupings. For this reason, most of the new standards are not 'one for one' replacements for existing Operating Policies and Planning Standards.

### **Transmission Agency of Northern California – TANC**

First, the definition of Interconnection Reliability Operating Limit includes the following statement --- “A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.” This statement seems to imply that it is OK to operate over the established limit if it would not cause cascading, even though it could result in damaging equipment, loss of load, or overloads on another entity’s facilities. We believe that implying that limits are only exceeded if the violation could lead to “instability, uncontrolled separation, or cascading outages” will lead to a degradation of system reliability. For example, a system operator may conclude that it is acceptable to violate an operating limit as long as the consequences are not a cascading outage. We do not believe that this philosophy is acceptable, especially in light of what happened back east on August 14, 2003.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **California Energy Commission**

The definition of Interconnection Reliability Operating Limit includes the following statement --- “A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system.” This seems to imply that it is OK to operate over the established limit if it would not cause cascading, even though it could result in damaging equipment, loss of load, or overloads on another entity’s facilities. We believe that implying that limits are only exceeded if the violation could lead to “instability, uncontrolled separation, or cascading outages” will lead to a degradation of system reliability. For example, a system operator may conclude that it is acceptable to violate an operating limit as long as the consequences are not a cascading outage. This philosophy is not acceptable.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **United States Bureau of Reclamation**

The Bureau of Reclamation is concerned that the proposed standard as written will be difficult to enforce. The standard also seems to imply that operating over limits would be permitted if it did not negatively impact the reliability of the system.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **Nebraska Public Power District NPPD**

NPPD does not believe that this standard goes far enough to protect the integrity of the bulk electric system. As stated in version 2 of the Functional Model the transmission operator has the responsibility to operate and direct the operations of the transmission system within equipment and facility ratings. This standard does nothing to require the transmission operator to take action to return the transmission system to an analyzed safe condition. This standard is too narrowly focused and does not provide the industry with the protection to eliminate a repeat of the August 14th blackout.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **Wisconsin Energy Corporation - PM WEC**

The requirements for either RA's or TO's to manage lower level facility operating limits for protecting assets or ensuring reliable operations in local areas have yet to be determined or initiated in the standards process. These "lower level" operating requirements must be defined and implemented concurrent with this standard.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **Pacific Gas & Electric PGAE**

As written, this posted Standard 200 could degrade system reliability since it only requires that the system be operated to avoid instability, uncontrolled separation or cascading. In truth, the system should also be operated within other limitations, such as equipment thermal ratings, generator capability limits, etc.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **ISO New England Inc ISNE**

This Standard addresses the necessary conditions of instability, separation and cascading outages. However, it does not cover "less severe" reliability concerns which may include, but are not limited to, thermal overloads in one Control Area being caused by poor dispatch, poor system control, or delayed contingency recovery in another Area. Given that the Balancing Standard attempts only to address issues related to system frequency (i.e. CPS 2, and DCS would no longer exist), these "less severe" reliability problems appear not to be addressed by any other standard currently proposed. There seems to be inadequate coordination among the Standards; we would offer a suggestion that NERC appoint a body to oversee and coordinate the Standards so that important criteria are not missed in the process.

**Responses to Operate within IROLs Standard Ballot**  
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The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**Public Service Electric and Gas Company**

The present language of the Standard proposed for Ballot must be modified to include the following issues

There must be a provision clearly stating that the Reliability Authorities have authority over all entities that operate within the RA area of responsibility.

There is a requirement in the RA Certification Standard that addresses this. That standard requires the RA to have a written agreement with all of the entities that report to the RA as well as with adjacent RAs that defines the authority of the RA.

**PSEG Energy Resources & Trade LLC PS**

**PSEG Power LLC**

There must be an express provision stating that Reliability Authorities have authority over all entities with facilities or operating within the RA's footprint. (Section 204)

There is a requirement in the RA Certification Standard that addresses this. That standard requires the RA to have a written agreement with all of the entities that report to the RA as well as with adjacent RAs that defines the authority of the RA.

- **Limits Impossible to Define**

**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

We find it very difficult to envision the sort of limit that might be an IROL given the differences between this standard and standard 600. We challenge the standard development team to identify the IROLs that were violated in the August 14, 2003 disturbance. Since this standard requires the IROLs to be identified before, not after, the fact we don't believe that any such limits could have been defined for the system that collapsed, except in the final few minutes.

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

- **Suggestions About Format of Standard, Typographical Errors**

**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

The individual items in Standards 200 should be presented by order of importance. Therefore the items should be renumbered in the following way:

-Standard 207 should become 204 as per bullet immediately above this one.

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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- Standard 204 “Actions” should be renumbered as 205. -Standard 208 which is linked with “Actions”, but from the perspective of acting on the directives of the RA, should become 206.
- Standard 205 should be renumbered as 207.
- Standard 206 should be renumbered to 208.

The standards will all be entered into a relational database where they can be retrieved by users. When this occurs, the order of the requirements will have little meaning, since most users are expected to retrieve only those requirements that are relevant to them. For example, an entity performing the TOP Function is expected to request just those requirements that are relevant to the TOP.

**Manitoba Hydro Electric Board MHEB (Electricity Brokers, Aggregators, and Marketers)**

**Manitoba Hydro MHEB (LSEs)**

**Manitoba Hydro (Transmission Owners)**

The need for the development of mitigation / corrective actions to be developed, identified and documented for each system condition and any possible violation is very important and this standard does not provide sufficient emphasis on this issue. The standard dealing with this requirement is 207, but we believe it should be better emphasized by placing it immediately after “Analysis and Assessments”.

The range of conditions that may occur on any given day is limitless. It isn’t practical to require that there be detailed plans for every possibility, just plans for those scenarios relative to IROLs that are most probable. There is another standard, “Coordinate Operations” that requires the RA to have a more detailed set of documents to address a wider range of specific operating scenarios. This standard’s focus is limited to IROLs.

**National Grid USA**

**New Brunswick Power Corporation NBPC**

**New York Power Authority NYPA**

**Niagara Mohawk NMPC**

**New York Power Authority MED**

**Northeast Utilities NU**

**Nova Scotia Power NSPI**

**Ontario - Independent Electricity Market Operator IMO**

**ISO New England Inc ISNE**

There is also an inconsistency throughout the Standard. It is titled differently in different places. The document title is “Operate Within Interconnection Reliability Limits” which is correct, however, all the headers within the document appear as “...Interconnected...” The NERC website incorrectly lists the title using the word Interconnected as well.

The titles have been revised so they are consistent.

**Entergy EES (Transmission Owners)**

Last, the title of the draft standard is “Operate Within Interconnected Reliability Operating Limits” Standard. The title should be “Interconnection”, not “Interconnected”.

The titles have been revised so they are consistent.

- **Comments about Sanctions**

**Mirant Americas Energy Marketing LP MAEM**

Concerned with financial sanctions being included at this point. How can this be enforced? My understanding is that not many entities have signed NERC's Reliability Agreement (Agreement for Regional Compliance and Enforcement Programs), enabling the RRCs to enforce compliance programs.

These standards are being written with the assumption that there will be legislation giving NERC the authority to levy financial sanctions. This concept has been adopted by the NERC BOT and is outside the scope of the SDT.

**Hydro One Networks Inc (LSEs)**

Monetary Sanctions Matrix: Hydro One Networks does not support the inclusion of monetary sanctions in NERC Standards.

These standards are being written with the assumption that there will be legislation giving NERC the authority to levy financial sanctions. This concept has been adopted by the NERC BOT and is outside the scope of the SDT.

**New York State Reliability Council**

**LIPA LIPA (Transmission Owners)**

The New York State Reliability Council is opposed to monetary sanctions

The New York State Reliability Council (NYSRC) is opposed to monetary sanctions as the only option for dealing with noncompliance as applied in this and other proposed NERC standards. Unfortunately, direct monetary sanctions invite “gaming the system”, and encourage “business” decisions based on potential profits or savings versus potential penalties. Instead of monetary sanctions, the NYSRC prefers that NERC have authority to issue letters of increasing degrees of severity to communicate non-compliance of standards. The use by the NYSRC and NPCC of letters to regulatory agencies for non-compliance has demonstrated that they are a very effective tool for ensuring adherence to standards; such letters establish the basis for liability in the event of a subsequent criteria violation; and in the case of market participant noncompliance, threaten the violator’s ability to continue to do business with or through an ISO or RTO. Moreover, letters that communicate noncompliance best allow focus on the “root cause” of a violation, as well as its reliability impact. Therefore, the NYSRC strongly recommends removal of monetary sanction matrices from this standard as well as future NERC standards, and consider instead the use of letters such as those presently applied by the NYSRC and NPCC.

These standards are being written with the assumption that there will be legislation giving NERC the authority to levy financial sanctions. This concept has been adopted by the NERC BOT and is outside the scope of the SDT. Further, monetary sanctions are in place in the WECC region and are helping motivate proper performance.

Note that in the Sanctions Table, monetary sanctions are not used as a ‘first response’ for anything but the most severe violations. In most cases, an entity that is not in compliance is sent a letter rather than a fine. In this standard, fines are relatively small – in most cases, the SDT recommended fines that start at a flat \$1,000 and progress if the performance continues to be unacceptable. The only requirement with a fine that is potentially large, is the requirement for operating within IROLs. If an IROL is exceeded for a time greater than its  $T_v$ , then the fine can be quite large, even on the first offense. This is designed to provide motivation to never allow operations to become so out of control that an IROL is exceeded for so long a time that the result

**Responses to Operate within IROLs Standard Ballot**  
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could be instability, a cascading outage or uncontrolled separation from the interconnection. For this violation, the SDT recommended a dollar per megawatt sanction. Several balloters recommended improvements to the sanction drafted by the SDT, and the sanction has been revised to ensure that it provides a sanction proportional to the risk placed on the interconnection.

In this standard, fines are used when there is a pattern or repetitive poor performance or for extremely severe instances of violating a critical reliability requirement., such as exceeding an IROL for time greater than  $T_v$ .

**ISO New England Inc ISNE**

The Monetary Sanction Matrix - There is an issue with the inclusion of this monetary sanction matrix and what its implications are. ISO-NE, as well as NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. ISO-NE has indicated that any posted Standard, with the included matrix, will not be supported by ISO-NE. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and ISO-NE will continue to work to oppose monetary sanctions.

These standards are being written with the assumption that there will be legislation giving NERC the authority to levy financial sanctions. This concept has been adopted by the NERC BOT and is outside the scope of the SDT. Further, monetary sanctions are in place in the WECC region and are helping motivate proper performance.

**United Illuminating UICO**

The Monetary Sanction Matrix - There is an issue with the inclusion of this monetary sanction matrix and what its implications are. The NPCC CMAS has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. UI agrees with this position.

These standards are being written with the assumption that there will be legislation giving NERC the authority to levy financial sanctions. This concept has been adopted by the NERC BOT and is outside the scope of the SDT. Further, monetary sanctions are in place in the WECC region and are helping motivate proper performance.

**NPCC**

**New York Power Authority MED**

**Northeast Utilities NU**

**LIPA LIPA (Transmission Owners)**

NPCC does not support the inclusion of a monetary sanction matrix. NPCC maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance.

These standards are being written with the assumption that there will be legislation giving NERC the authority to levy financial sanctions. This concept has been adopted by the NERC BOT and

**Responses to Operate within IROLS Standard Ballot**  
***Other Comments on Standard***

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is outside the scope of the SDT. Further, monetary sanctions are in place in the WECC region and are helping motivate proper performance.

**National Grid USA**

**New Brunswick Power Corporation NBPC**

**New York Power Authority NYPA**

**Niagara Mohawk NMPC**

**New York Power Authority MED**

**Northeast Utilities NU**

**Nova Scotia Power NSPI**

**Ontario - Independent Electricity Market Operator IMO**

The Monetary Sanction Matrix - There is an issue with the inclusion of this monetary sanction matrix and what its implications are. The NPCC CMAS has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. CMAS has indicated that any posted Standard, with the included matrix, should not be supported by NPCC. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and NPCC will continue to work to oppose monetary sanctions.

These standards are being written with the assumption that there will be legislation giving NERC the authority to levy financial sanctions. This concept has been adopted by the NERC BOT and is outside the scope of the SDT. Further, monetary sanctions are in place in the WECC region and are helping motivate proper performance.

**Gainsville Regional Utilities GVL (LSEs)**

**City of Tallahassee TAL (Transmission Owners)**

Sanctions – If the performance reset period is 12 months, then the financial sanctions could be minimal. Was that the intent? The identification of IROLS is critical to reliability.

The performance reset period was 12 months without a violation. The way this performance reset period works, performance is measured over the course of a 12 month period of time. If there is any violation during this time, then the performance reset period would not reset and successive violations would result in increasingly more severe sanctions.

Note that in most cases, the financial sanctions in this standard are only \$1,000 or \$2,000. Most of the requirements in this standard are related to 'background' documents or processes that are needed to support operating within IROLS. These items are very important, but don't have the same direct link to reliability as operating outside an IROL. The only violation in this standard that could have a substantial monetary fine is operating outside of an IROL for a time greater than  $T_v$ .



- **Comments Submitted with Postings Need More Attention**

### Calpine Power Management LP

We concur with the issues raised by the Southwest Power Pool as to the readiness of the Standard to be voted on.

The SPP did not submit comments as part of a ballot for this standard. The SDT reviewed again the comments submitted by SPP during the last posting of this draft standard. Following are all of the comments submitted during that posting, and the responses provided to SPP's comments and all comments were addressed by the SDT.

It is very cumbersome and can often times be very confusing when two entities are given responsibility for the same task. The requirements outlined in 1.1, 1.2 and 1.1.2 call for both the reliability authority and the planning authority to identify the facilities that have IROLs and also to identify the IROL. We suggest that the reliability authority should be ultimately responsible for identifying and quantifying the IROLs since these are operating limits. However, the reliability authority should thoroughly coordinate this effort with the planning authority. Wording such as "The reliability authority shall coordinate with the planning authority to identify..." would be better. Following this line of thought with the measures in 2.1, 2.1.1 and 2.2, wording should be changed to reflect the reliability authority's ultimate responsibility. "The reliability authority entity shall establish..." makes a better fit.

Several commenters indicated that the RA should be the only function responsible for this requirement, and that change was made to the standard. It is still unclear as to what duties, if any, will be assigned to the Planning Authority, and the SDT elected to omit specific references to the Planning Authority in this standard.

The performance reset period should be changed to 12 months rather than one calendar year.

There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.

The SDT needs to revisit the levels of non-compliance associated with this standard. If compliance is truly a black/white issue with no shades of gray as the proposed levels indicate, why not have just a level one with no financial penalty? The proposed non-compliance level implies that it may be more important to have a list of IROLs rather than a correct list of IROLs. Also, if no IROLs exist, there will be no list which would cause the reliability authority to be in non-compliant. There needs to be consistency throughout all the standards on documentation-type non-compliance.

Several commenters indicated a need to add more levels of non-compliance, and to address 'partial credit' for incomplete lists. Consequently, the standard was modified to require that the lists be updated and to require that the RA have evidence that the lists were updated – and a level three non-compliance was added to give partial credit to RAs who have lists but haven't updated them. This may be equivalent to having an 'incomplete' list. With respect to the appropriateness of levels of non-compliance for documentation - the SDT is only working on this standard, and doesn't have the authority to control what is included in other standards.

Combine 4.3 and 4.3.1 into a revised 4.3 as follows:

"The reliability authority shall have displays with real-time data associated with interconnection reliability operating limits."

References to displays were dropped from this standard since, under some conditions, the RA may not have displays available. The intent is for the RA to demonstrate that it is performing monitoring; therefore the revised wording for 4.3 meets this requirement. In

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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addition, the RA must demonstrate that it has tools needed for monitoring as part of the RA Certification.

The performance reset period should be changed to 12 months rather than one calendar year.

There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.

Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump directly to level four non-compliance? Is progressive non-compliance not an option? For example, if a reliability authority had identified 25 IROLs, he is level four non-compliant if only one of the IROLs is not available for real-time use. Shouldn't there be allowances for such situations? Also, perhaps a letter that lists critical displays and identifies discrepancies would be more beneficial to maintaining interconnection reliability than a monetary penalty.

100 of the 132 commenters were in favor of the proposed levels of non-compliance.

The proposed measures may be too weak. For example, it appears that a reliability authority could satisfy the operational planning analysis by evaluating an invalid case for a given day. While it meets the letter of the measure, it doesn't meet the intent of the measure. Also, does 2.1.2 apply to IROLs that are associated with stability limits? If so, this measure would require a reliability authority to run real-time stability analyses every 30 minutes.

The term, 'analysis' is not synonymous with 'study.' IROLs may be associated with stability limits, but this does not mean that a stability study needs to be conducted every 30 minutes. The standard does not specify what tools must be used to conduct the analysis or the assessment – this is left up to the RA.

Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump directly to level four non-compliance? Is progressive non-compliance not an option? Is missing an operational planning assessment one day in a month as detrimental as missing it 10-15 days per month? Similarly, is missing one real-time assessment as bad for reliability as missing these assessments for hours, on a regular basis?

The levels of non-compliance were adjusted to reflect changes to the compliance monitoring process. Under the revised standard, a level three non-compliance was added.

The performance reset period should be changed to 12 months rather than one calendar year.

There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation"

Non-compliance items should match the standard's definitions. Section 5.1 should be referred to as a Documentable Interconnection Reliability Operating Limit Violation. Section 5.2 should be referred to as an Interconnection Reliability Operating Limit Violation or a Reportable Interconnection Operating Limit Violation, whichever is correct (see response to Question 1).

The terms, Documentable IROL and Reportable IROL were not used in the last draft of this standard, and several commenters indicated it should be dropped. The terminology

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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used in the levels of non-compliance matches the terminology used in the standard, so this suggestion was not adopted.

Requirements 1.1, 1.2 and 1.3 are too open-ended on the part of the reliability authority. Justification should be required for all requested data to prevent unreasonable and burdensome requests on the part of the reliability authority. The data requested and the timing of the delivery of the data should be mutually agreeable to the reliability authority and the responding entity.

Adding a justification requirement seems to be overly burdensome. If an entity wants to challenge the need for data and can't resolve the issue with its RA, then that entity can use the dispute resolution process.

The SDT should define a minimum, default set of data, such as that spelled out in Appendix 4B, and provide that as a guide for what type of data may be requested.

The industry as a whole is not in favor of a 'minimum' set of data. Any RA is free to copy the contents of Appendix 4B and include this as part of its data specification. Appendix 4B, by itself, would not meet all of the measures in this requirement.

Requirement 1.3 appears to be repeated again as a measure in Measure 2.3. Shouldn't Requirement 1.3 be moved to Standard 206 since it deals with provision of the data? In fact, there is a great deal of material in 205 that is related data provision. Shouldn't all of this be moved to 206? Perhaps additional clarification between 205 and 206 is all that is needed.

There are many different ways of sorting the various requirements in this standard. Industry comments on the first version of the standard indicated a preference for putting related requirements together. If requirement 1.3 were moved to 206, this might increase confusion. In requirement 206, one RA has to provide data to another RA, and it may be confusing as to which RA had to notify the Compliance Monitor when data wasn't provided as specified.

The performance reset period should be changed to 12 months rather than one calendar year.

There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.

The cover letter requirement in 4.3.1 is confusing and needs clarification. While such a letter can provide evidence that data has been sent, such a requirement could also prove to be excessive and impractical. Infrequent data transmittals such as impedance changes, ratings, etc, could easily be transmitted under cover letter. However, does this requirement also apply to each bit of real-time data transmitted via ICCP?

Several commenters agreed with your comment about 4.3.1. The standard was revised as follows: Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. ~~Copies of transmittal cover letters indicating data was sent to the reliability authority.~~

Only one data point out of potentially thousands of points could cause non-compliance as specified in Section 5. This implies that nothing less than 100% of the data, 100% of the time is sufficient. Is this the intent of the SDT? Is a transducer failure in a remote substation as damaging to reliability of the interconnection as the loss of an entire ICCP link between a responding entity and its reliability authority? Is a failure for one scan cycle as critical as that point not being available for days or weeks? It would appear that non-compliance associated with this standard needs revisiting.

The data specification issued by the RA under requirement 205 must identify how real time data will be supplied when there are telecommunication failures. As long as the data is

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***Other Comments on Standard***

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supplied as specified, there is no sanction. (205.2.1.2 Specification shall address the data provision process to use when automated real-time system operating data is unavailable.)

There appears to be inconsistency between non-compliance in 205 and 206. If a reliability authority makes an unreasonable data request in 205 and doesn't get the requested data within the specified timeframe, then the reliability authority is only penalized at a level one. But if a responding entity loses one data point for one four-second data scan, that responding entity is blasted with a level four penalty. There does not appear to be equity here.

If an entity feels that the data specified by the RA is unreasonable, then that entity can try to resolve the issue with its RA or through the dispute resolution process. Both requirements 205 and 206 were modified to add a provision that if the RA is able to resolve the issue of not receiving the data it needs, then the RA does not need to notify its compliance monitor. There is only a level four non-compliance for requirement 206 if the entity does not provide the data as specified AND the entity is unable to resolve the discrepancy with its RA.

Generator operators need to be added to the entities listed in Requirement 1.1.

The Functional Model provides a 'chain of command' type of functional relationship that has been supported in the development of this standard. This 'chain of command' type of structure doesn't support having the RA direct all entities performing all functions, rather the Functional Model has the RA giving directives to a subset of functions, and this subset of functions then passes on instructions to other functions. The generator operator was not added to the list of functions that must comply with this standard because under the Functional Model, the generator operator takes direction from the balancing authority, not the reliability authority.

Requirement 1.2 is repeated again in Measure 2.1.

Some commenters indicated a preference for including a measure that specifically addresses each of the requirements. The measures are intended to identify the elements that the compliance monitor will look at to determine if the desired performance has been achieved – there is nothing wrong in including the same language in both the requirement and the measures.

The levels of non-compliance need to be reviewed to ensure that they accurately reflect how well the directives were followed. Timing of actions taken with regards to when the directives were issued should also be considered.

In many instances, how well a RA's directives are followed is a function of the communication skills of the system operator providing direction. If the RA's directives include timing, then it is fair to include a consideration of timing when assessing non-compliance. If the RA's directives do not include a timing requirement, then this would be impossible to measure objectively.

The SDT should utilize the NERC functional model and thoroughly review and correct all definitions associated with this standard. Some definitions included in this standard are not needed and others don't appear to belong in the standard. Others are simply the wrong definition. Noting the comment box on page 3 of the standard, we wonder why a definitions section was even included in the standard.

Here are some specific problem definitions:

Real-time Monitoring and the use of vision and hearing to define this term.

The term, 'real-time monitoring' was revised by replacing the phrase, "To use vision and hearing to scan. . ." with the phrase, "The act of scanning . . ."

Real-time – Shouldn't historical time also be included?

It is not clear why historical time should be included in a definition of real time.

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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Self-certification – Why is this term included in this standard? It probably belongs in the Compliance Enforcement Document. The second sentence doesn't appear to be a part of the definition.

Self-certification is used in this standard and hasn't been previously defined in the glossary of terms associated with Reliability Standards. Several entities requested that the term be defined during the last posting of this standard.

Transmission Operator has the wrong definition. The definition given is the definition for Transmission Service Provider.

The definition for Transmission Operator was transposed with the definition for Transmission Service Provider.

Documentable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Event have the exact same definition.

Reportable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Violation are basically the same definition.

Reportable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Violation are not used in the standard and have been dropped from the list of defined terms.

T<sub>v</sub> should be listed as T<sub>v</sub>.

The missing subscript "Tv" rather than "T<sub>v</sub>", is a typo and has been corrected.

This standard does not require the reliability authority to notify those entities not providing data to remind those entities that they should be providing data. The reliability authority should be trying to obtain the missing data and working to resolve differences that prevent delivery of the data. If the reliability authority and the responding entity cannot reach agreement on data delivery, then the reliability authority should notify the compliance monitor.

Agreed – this standard does not require the RA to provide a reminder to those entities that need to provide data. This does not preclude the RA from providing such a reminder.

The performance reset period of one calendar year in 201, 202, 204 and 205 should be changed to 12 months. 206, 270 and 208 should remain 12 months.

There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.

Areas where non-compliance is the result of a lack of proper documentation should be consistent throughout each individual standard and across all standards, especially between this standard and Standard 600, Determine Facility Ratings, System Operating Limits and Transfer Capabilities.

Changes in standards are driven by the comments submitted by the industry. A lack of proper documentation in one standard is not necessarily the same as in another standard.

**Westar Energy Generation & Marketing WRGS (Generators)**

Does not meet criteria suggested by SWPP ORWG.

The SWPP did not submit comments as part of a ballot for this standard.

**Westar Energy Generation & Marketing WRGS (Brokers)**

Based on SPP reliability working group recommendations

The SWPP did not submit comments as part of a ballot for this standard.

▪ **Transmission Owners Fiduciary Responsibilities And Liability Concerns**

**Carolina Power & Light Company CPL (Transmission Owners)**

**Carolina Power & Light Company CPL (LSEs)**

**Carolina Power & Light Company CPL (Generators)**

Overall, this standard ignores Transmission Owners' fiduciary responsibilities and liability concerns, thereby ignoring coordination of responsibilities among the industry entities. Transmission Owners must be an integral part of the development of limits, operations to stay within those limits, and monitoring of facilities. Leaving out the concerns of the Transmission Owners would ignore their fiduciary responsibilities and liability concerns. Such a lack of coordination in the planning phase would result in confusion in the operating not unlike that exhibited in the northeast blackout.

The Transmission Owner is responsible for establishing facility ratings for its equipment. The Transmission Owner's facility ratings must be respected by the entities that develop associated system operating limits and Interconnection Reliability Operating Limits. The new standards being developed by NERC are being developed in support of the terminology and concepts in the Functional Model. The Functional Model assigns the Reliability Authority the responsibility for identifying IROLs. To clarify that the Transmission Owner's facility ratings must be respected, this standard has been revised to include a statement indicating that the IROLs are developed from SOLs that are developed according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.

**Entergy EES (Transmission Owners)**

The drafting team has completely ignored the fiduciary responsibilities and liability concerns of Transmission Owner. Transmission Owners must be an integral part of the development of the limits, operations to keep the system within those limits and monitoring of the facilities. This standard should be revised to reflect those fiduciary responsibilities and liability concerns.

The Transmission Owner is responsible for establishing facility ratings for its equipment. The Transmission Owner's facility ratings must be respected by the entities that develop associated system operating limits and Interconnection Reliability Operating Limits. The new standards being developed by NERC are being developed in support of the terminology and concepts in the Functional Model. The Functional Model assigns the Reliability Authority the responsibility for identifying IROLs. To clarify that the Transmission Owner's facility ratings must be respected, this standard has been revised to include a statement indicating that the IROLs are developed from SOLs that are developed according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

**Georgia Power Company (LSEs)**

Overall, this standard ignores Good Utility Practice and the Transmission Owners fiduciary responsibilities and liability concerns. It thereby ignores the coordination of responsibilities

**Responses to Operate within IROLs Standard Ballot**  
***Other Comments on Standard***

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among the industry entities, and the standard should have these two definitions modified. The Transmission Owner is responsible for establishing facility ratings for its equipment. The Transmission Owner's facility ratings must be respected by the entities that develop associated system operating limits and Interconnection Reliability Operating Limits. The new standards being developed by NERC are being developed in support of the terminology and concepts in the Functional Model. The Functional Model assigns the Reliability Authority the responsibility for identifying IROLs. To clarify that the Transmission Owner's facility ratings must be respected, this standard has been revised to include a statement indicating that the IROLs are developed from SOLs that are developed according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.

FERC's definition of Good Utility Practice is repeated here:

Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act, to the exclusion of all others, but rather to be a range of acceptable practices, methods, or acts generally accepted in the region. Good Utility Practice shall include, but not be limited to, compliance with Applicable Laws and Regulations, Applicable Standards, the National Electric Safety Code, and the National Electrical Code, as they may be amended from time to time, including the criteria, rules and standards of any successor organizations.

- ***IROL Violation Report Form***  
**Southern Company Services SOCO (Generators)**  
**Southern Company Services SOCO (Transmission Owners)**  
**Carolina Power & Light Company CPL (Transmission Owners)**  
**Carolina Power & Light Company CPL (LSEs)**  
**Carolina Power & Light Company CPL (Generators)**  
**Georgia Power Company (LSEs)**

The **IROL violation Report Form** does not appear to capture some pretty important data, such as affected parties and narrative on the event. Also, this is the first opportunity for "the world" to review the actual form. It was only referenced in previous postings.

Some of the data that is contained within the existing report filed as part of Policy 2 is not used in the IROL Violation Report. There are some elements in the existing report that are used to analyze the reason for operating security limit violations. In the set of new Reliability Standards, the analysis of major system events is addressed in the "Monitor and Analyze Disturbances, Events and Conditions Standard." The IROL Violation Report is a compliance form used to collect immediately available data that indicates the severity of the IROL violation.

- **Tools, training, etc.**

**National Grid USA**

**New Brunswick Power Corporation NBPC**

**New York Power Authority NYPA**

**Niagara Mohawk NMPC**

**New York Power Authority MED**

**Northeast Utilities NU**

**Nova Scotia Power NSPI**

**Ontario - Independent Electricity Market Operator IMO**

**Hydro One Networks Inc (LSEs)**

**ISO New England Inc ISNE**

The System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

There is sufficient time provided in the implementation schedule for each entity to provide its system operators with the tools and training needed to comply with the standard.

The scope of this standard must be within the associated SAR which did not include tools or training of system operators. Both tools and training are addressed in the certification standards for the RA, Balancing Authority, and TOP.



- **Comments about Adherence to Standards Development Process**

**Southern Company Services SOCO (Generators)**

**Southern Company Services SOCO (Transmission Owners)**

**Georgia Power Company (LSEs)**

It appears that there were some standard responses that the SDT developed and used for most of the comments. It did not appear that all comments were given their due consideration.

The SDT has considered every comment submitted with each posting of this standard. Many of the industry comments submitted with ballots were comments that had not been submitted on any of the postings of the draft standard. Many of the comments that the SDT has been unable to resolve are unrelated to this standard – these are comments that relate to elements within the compliance program, an understanding of the standards development process, and an understanding of the functional model.

**Bonneville Power Administration - Power Business BPAP**

Procedurally, it seems that for the number of changes that were made to the standard after the last round of comments, an additional round of comment would have been more appropriate than taking this dramatically changed draft to a final vote.

The first ballot of the Standards Process is equivalent to the ‘Call for the Question’ in Robert’s Rules of Order. The purpose of the “Call for the Question” is to determine if the industry is ready to ballot a standard. From the results of the ballot, it is clear that the industry wants changes to their understanding of the standards process, to the compliance program, to the functional model, and to this standard.

**Tennessee Valley Authority - Transmission/Power Supply (Transmission Owners)**

The resolution of industry concerns as expressed through the comment period is required for this standard to be acceptable. Our region as well as other federal entities have expressed similar concerns.

The SDT has considered every comment submitted with each posting of this standard. Many of the industry comments submitted with ballots were comments that had not been submitted on any of the postings of the draft standard. Many of the comments that the SDT has been unable to resolve are unrelated to this standard – these are comments that relate to elements within the compliance program, an understanding of the standards development process, and an understanding of the functional model.

**Bonneville Power Administration Transmission BPAT**

There should be a Technical Reference, either attached to the Standard or as an appendix to the Standard, with much of the information that is in the Question and Answer document, including the IROL Violation Report form.

The SDT may develop or recommend the development of a Technical Reference to support this standard, however the SDT was unable to develop a Technical Reference in a timeframe that would coincide with the development of this standard. (SDTs are not precluded from drafting informal documents such as ‘FAQs’.) According to the Reliability Standards Process Manual, a Technical Reference must be approved by the Standing Committees. Until the standard is

finalized, it isn't practical to finalize a Technical Reference and submit it to the Standing Committees for approval.

- **Other Miscellaneous Comments**

**Cinergy Corporation CIN**

In light of the events affecting the Eastern Interconnection on August 14, 2003 resulting in the blackout of millions of customers in the United States and Canada, Cinergy feels that the standard may not adequately address recommendations yet to come from the Task Force investigating the event. Cinergy believes that the approval of this standard should wait until recommendations from the Task Force on preventing future blackouts are released.

The SDT has monitored the blackout investigation and interim reports and has not see anything in the blackout findings that indicates a need to change this standard. If the blackout recommendations do indicate a need for additional requirements that are closely related to the topics addressed in this standard, then additional SARs may be developed to address those requirements. The Standards Development Process mandates that this SDT develop a standard that is within the scope of the already approved SAR for this standard. Adding requirements that are outside the scope of the approved SAR is not acceptable within the Standards Development Process.

**Con Edison Company of New York CEPD**  
**Con Edison Company of New York CEPD**  
**Consolidated Edison Co. of New York NYCE**  
**New York State Reliability Council**  
**LIPA LIPA (Transmission Owners)**

It should be stated in Standard 200 that more stringent criteria than specified in the Standard may be adopted by a Region or sub-region, even if not specifically identified in the Regional Differences section.

According to the Reliability Standards Process Manual (pages 20-21), if a Region wants specific language added to a NERC Reliability Standard to reflect a requirement that is only applicable to a Region, then the Region must request a Regional Difference. There weren't any requests for Regional Differences in this Standard. Regions are not precluded from adopting and enforcing more stringent criteria than specified in a NERC Reliability Standard.

**MAIN**

This standard appropriately does not just use the limits described in "(Draft) Standard 600 - Determine Facility Ratings, System Operating Limits and Transfer Capabilities" since the IROLs are to address circumstances that lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. This distinction should be preserved and made more clear.

The first requirement in this standard (201 – IROL Identification) has been revised to include a specific link to Standard 600.

**Wisconsin Energy Corporation - PM WEC**

We agree with requirements 202, 203, 205, 206.

## **Monitor and Assess Short-term Transmission Reliability — Operate within Interconnection Reliability Operating Limits Standard**

### **Background**

The Monitor and Assess Short-term Transmission Reliability — Operate within Interconnection Reliability Operating Limits Standard was posted for a second public comment period from July 1 through August 29, 2003. The SDT asked industry participants to provide feedback on the revisions made to the standard through a special SAR Comment Form. There were 40 sets of comments, including comments from more than 150 different people, submitted via this special Standard Comment Form. The comments can be viewed in their original format at:

<http://www.nerc.com/~filez/sar-approved.html>

The SDT made changes to the definitions and the standard based on the comments submitted by industry participants. The changes the SDT made to the definitions and the language within the standard are highlighted in the first sections of this document. The SDT's consideration of comments is provided in yellow highlighted text immediately under each question.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Director of Standards, Tim Gallagher at 609-452-8060 or at [tim.Gallagher@nerc.com](mailto:tim.Gallagher@nerc.com).

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### Changes to Definitions (Note that changes are shown in blue text.)

**Balancing Authority:** Integrates resource plans ahead of time, and maintains load-interchange-generation balance within its metered boundary and supports system frequency in real time.

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk transmission system.

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

~~**Documentable Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for any length of time.~~

**Generator Operator:** Operates generating unit(s) and performs the functions of supplying energy and Interconnected Operations Services.

**Generator Owner:** The entity that owns the generator.

**Instability:** The inability of the transmission system to maintain a state of equilibrium during normal and abnormal system conditions or disturbances.

**Interconnection Reliability Operating Limit:** A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. ~~The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to  $T_v$ . Note that  $T_v$  may be zero.~~

**Interconnection Reliability Operating Limit Event:** An instance of exceeding an interconnection reliability operating limit for any length of time.

**Interconnection Reliability Operating Limit Event Duration:** The length of time an interconnection reliability operating limit is exceeded. The duration is measured from the point where the limit is first exceeded and ends when the value drops below the limit and remains below the limit for at least 30 seconds.

~~**Interconnection Reliability Operating Limit Violation:** An instance of exceeding an interconnection reliability operating limit for time greater than or equal to  $T_v$ .~~

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**Load-serving Entity:** Secures energy and transmission (and related generation services) to serve the end user.

**Occurrence period (Performance-reset Period):** The time period in which performance is measured, evaluated, and then reset.

**Operational Planning Analysis:** An analysis of the expected system conditions, given the peak load forecast(s); and known system constraints, some examples being transmission facility outages, generator outages and equipment limitations. ~~The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions.~~

**Real-time:** ~~Immediate~~ Present time as opposed to future time.

**Real-time Assessment:** An ~~evaluation~~ examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data. ~~to determine the status of the electric system. The reliability authority uses real-time data to conduct its real-time~~

**Real-time Data:** Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values – may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-time Monitoring:** ~~To use vision and hearing to scan various real-time sources~~ The act of scanning data and drawing conclusions about what the data indicates. ~~Having the ability to scan real-time data as conditions dictate.~~

**Reliability Authority:** Ensures the reliability of the bulk power transmission system within its Reliability Authority Area.

**Reliability Authority Area:** ~~A defined electrical system bounded by interconnection (tie-line) metering and telemetry under the control of a single reliability authority.~~

The collection of generation, transmission, and loads within the boundaries of the organization performing the reliability authority function. Its boundary coincides with one or more balancing authority areas.

**Reportable Interconnection Reliability Operating Limit Violation:** ~~An instance of exceeding an interconnection reliability operating limit for time greater than or equal to the interconnection reliability operating limit's Tv.~~

**Self-certification:** A process by which ~~whereby~~ an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard. ~~submits a form to its compliance monitor, indicating that the entity is in compliance with a specific requirement or set of requirements for a reliability standard.~~

~~Self-certification forms generally require the signature of an officer of the corporation. Most self-certification forms are completed on an annual basis although they may be required more often~~

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**T<sub>v</sub>:** ~~The violation time associated with a limit.~~ The maximum time that an interconnection reliability operating limit can be exceeded without compliance sanctions being applied.

**Transmission Operator:** ~~The entity that provides transmission services to qualified market participants under applicable transmission service agreements.~~ The entity that operates the transmission facilities and executes switching orders.

**Transmission Owner:** Owns transmission facilities.

**Uncontrolled Separation:** The unplanned break-up of an interconnection, or portion of an interconnection, that is not the result of automatic action by a special protection system or remedial action scheme operating correctly.

**Wide Area Impact:** The impact of an event that, if left untended, could lead to voltage instability, cascading outages or uncontrolled separation that jeopardizes the reliability of an interconnection. The geographic size of the area affected by such an event is always larger than the local area monitored by a single transmission operator and may also also be larger than a single Reliability Authority.



Note that the numbering scheme used in formatting the standard was revised and is not reflected here. In this version, defined terms are capitalized, but not highlighted as a change to the standard.

## Changes to Standard

### 201 IROL Identification

#### 1. Requirements

- 1.1. The Reliability Authority ~~and planning authority~~ shall identify and document which Facilities (or groups of Facilities) in the Reliability Authority's Reliability ~~Authority~~ Area are subject to Interconnection Reliability Operating Limits.
- 1.2. The Reliability Authority ~~and planning authority~~ shall identify each Interconnection Reliability Operating Limit within the Reliability Authority's Reliability ~~Authority~~ Area.
  - ~~1.2.1.~~ The Reliability Authority ~~or planning authority~~ shall identify a ~~maximum response time ( $T_v$ ) for any each~~ Interconnection reliability Operating Limit ~~.that does not already have a  $T_v$ .~~

#### 2. Measures

- 2.1. The ~~entity responsible~~ Reliability Authority shall ~~establish~~ have a list of Facilities (or groups of Facilities) in the Reliability Authority's Reliability ~~Authority~~ Area that are subject to Interconnection Reliability Operating Limits.
  - 2.1.1. ~~The Reliability Authority shall have evidence it reviews and updates the list of Facilities to reflect changes in system topology~~
- 2.2. The ~~entity responsible~~ Reliability Authority shall ~~establish~~ have a list of Interconnection Reliability Operating Limits for the Reliability Authority's Reliability ~~Authority~~ Area.
  - 2.2.1. The ~~entity responsible~~ Reliability Authority shall ~~establish~~ have a ~~maximum response time ( $T_v$ ) for any each~~ Interconnection Reliability Operating Limit. ~~.that does not already have a  $T_v$ .~~
- 2.3. The Reliability Authority shall update the list of Interconnection Reliability Operating Limit values to reflect current system conditions.

#### 3. Regional Differences

None identified.

#### 4. Compliance Monitoring Process

- 4.1. The ~~entity responsible~~ Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

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- 4.2. The performance-reset period shall ~~be one calendar year~~ 12 months from the last violation. The Reliability Authority ~~entity responsible~~ shall keep data on Facilities and limits for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- 4.3. The ~~entity responsible~~ Reliability Authority shall have the following available upon the request of its Compliance Monitor:
  - 4.3.1. List of Facilities (or groups of Facilities) in the Reliability Authority's Reliability Authority Area that are subject to Interconnection Reliability Operating Limits
  - 4.3.2. List of Interconnection Reliability Operating Limits for the Reliability Authority's Reliability Authority Area
  - 4.3.3. Evidence that the list of Facilities subject to Interconnection Reliability Operating Limits and the list of Interconnection Reliability Operating Limits were updated.

### 5. Levels of Non-compliance

- 5.1. Level one: Not applicable
- 5.2. Level two: Not applicable
- 5.3. Level three: ~~Not applicable~~ Either the list of Interconnection Reliability Operating Limits or the list of Facilities subject to Interconnection Reliability Operating Limits was not updated.
- 5.4. Level four: No list of Interconnection Reliability Operating Limits or no list of Facilities subject to Interconnection Reliability Operating Limits ~~exists~~ for the Reliability Authority's Reliability Authority Area.

### 6. Sanctions

- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. ~~(Attached at the end of this draft standard for reference and comment.)~~ In places where financial sanctions are applied for non-compliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## **202 Monitoring**

### **1. Requirements**

- 1.1. The Reliability Authority shall ~~monitor real-time~~ perform Real-Time Monitoring of system operating parameters to determine if ~~it the Reliability Authority Area~~ is operating ~~its reliability area~~ within its Interconnection Reliability Operating Limits.

### **2. Measures**

- 2.1. The Reliability Authority shall have Interconnection Reliability Operating Limits available for its operations personnel's Real-time Use.
- 2.2. The Reliability Authority shall have Rreal-time Data available in a form that system operators can compare to the Interconnection Reliability Operating Limits.
- 2.3. The Reliability Authority shall monitor system operating parameters and compare these against its Interconnection Reliability Operating Limits.

### **3. Regional Differences**

None identified.

### **4. Compliance Monitoring Process**

- 4.1. The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The Performance-reset Period shall be ~~one calendar year~~ 12 months from the last violation. The Reliability Authority shall keep data on limits for three calendar years. The compliance monitor shall keep audited data for three calendar years.
- 4.3. The Rreliability Authority shall ~~have demonstrate~~ the following ~~available~~ upon the request of the Compliance Monitor:
  - 4.3.1. ~~Display(s) with real time data associated with interconnection reliability operating limits~~ System operators actively monitoring and comparing Real-time system operating parameters associated with Interconnection Reliability Operating Limits.

### **5. Levels of Non-compliance**

- 5.1. Level one: Not applicable
- 5.2. Level two: Not applicable
- 5.3. Level three: Not applicable

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- 5.4. Level four: A level four non-compliance occurs if any of the following conditions are present:
  - 5.4.1. Interconnection Reliability Operating Limits not available to operations personnel for real time use; or
  - 5.4.2. Real-time Data not available in a form that can be compared to the Interconnection Reliability Operating Limits; or
  - 5.4.3. System operating parameters not monitored and compared against Interconnection Reliability Operating Limits.

### 6. Sanctions

- ~~6.1.~~ Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. *(Attached at the end of this draft standard for reference and comment.)* In places where financial sanctions are applied for non-compliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## **203 Analyses and Assessments**

### **1. Requirements**

- 1.1. The Reliability Authority shall perform Operational Planning Analyses to ~~verify that its~~ assess whether the planned Bulk Electric System operations ~~within the Reliability Authority's Reliability Authority Area~~ will ~~not~~ exceed any of its Interconnection Reliability Operating Limits.
- 1.2. The Reliability Authority shall perform Real-time Assessments to ~~verify that it is not determine~~ if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits ~~or is expected to exceed any Interconnection Reliability Operating Limits~~.

### **2. Measures**

- 2.1. The Reliability Authority shall identify operating situations or events that impact its ~~ability to operate its~~ Reliability Authority Area's ~~ability to operate~~ without exceeding any Identified Interconnection Reliability Operating Limits.
  - 2.1.1. The Reliability Authority shall conduct an Operational Planning Analysis at least once each day, evaluating the next day's projected system operating conditions.
  - 2.1.2. The Reliability Authority shall conduct a Real-time Assessment periodically, but at least once every 30 minutes.

### **3. Regional Differences**

None identified.

### **4. Compliance Monitoring Process**

- 4.1. The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, and investigations upon complaint, to assess performance.
- 4.2. The Performance-reset Period shall be ~~one day~~ 12 months from the last violation. The Compliance Monitor shall keep audited data for three calendar years.
- ~~4.3.~~ The Reliability Authority shall ~~demonstrate~~ identify the following upon the request of the Compliance Monitor:
  - ~~4.3.1. Ability to perform an operational planning analysis~~-The time the most recent Operational Planning Analysis was conducted
  - ~~4.3.2. Ability to perform a real time assessment~~-Whether the planned Bulk Electric System operations within the Reliability Authority's Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits
  - 4.3.3. The time the most recent Real-time Assessment was conducted

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- 4.3.4. Whether the assessment identified if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits

### 5. Levels of Non-compliance — ~~Penalties Shall be Applied Separately~~

#### ~~Operational Planning Analysis~~

- 5.1. Level one: Not applicable
- 5.2. Level two: Not applicable
- 5.3. Level three: ~~Not applicable~~—A level three non-compliance exists if any of the following conditions are present:
- 5.3.1. No indication that an Operational Planning Analysis was conducted at least once each day
- 5.3.2. No indication that a Real-time Assessment was conducted at least once each 30 minutes
- 5.4. Level four: ~~Operational planning analysis was not conducted at least once each day~~—A level four non-compliance exists if either of the following conditions are present:
- 5.4.1. The Reliability Authority could not identify whether the planned Bulk Electric System operations within the Reliability Authority's Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits, based on the results of the most recent Operational Planning Analysis
- 5.4.2. The Reliability Authority could not identify whether the most recent Real-time Assessment identified if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits

### 6. Sanctions

- ~~6.1.~~ Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. ~~(Attached at the end of this draft standard for reference and comment.)~~ In places where financial sanctions are applied for non-compliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## **204 Actions**

### **1. Requirements**

- 1.1. The Reliability Authority shall act<sup>1</sup> or direct others to act to:
  - 1.1.1. Prevent instances where Interconnection Reliability Operating Limits may be exceeded
  - 1.1.2. Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded
- 1.2. The Reliability Authority shall document instances of exceeding Interconnection Reliability Operating Limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding Interconnection Reliability Operating Limits for time greater than ~~or equal to~~  $T_v$ .
  - 1.2.1. The Reliability Authority shall measure the duration of the event from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limits for a minimum of 30 seconds.

### **2. Measures**

- 2.1. The Reliability Authority shall document each instance ~~where actions are taken or directives are issued to mitigate the magnitude and duration~~ of exceeding an Interconnection Reliability Operating Limit:
  - 2.1.1. The reliability authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)
- 2.2. The Reliability Authority shall report each instance of exceeding an Interconnection Reliability Operating Limit for time greater than ~~or equal to~~  $T_v$ :
  - 2.2.1. The Reliability Authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its Compliance Monitor within five business days of the initiation of the event. (The report includes the date and time of the event, identification of which Interconnection Reliability Operating Limit was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the Interconnection Reliability Operating Limit, actions taken or directives issued ~~and the time these were initiated or issued~~, and explanation of results of actions or directives.)

### **3. Regional Differences**

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<sup>1</sup> Note that the reliability authority may choose to take 'no overt action' and this may be an acceptable action ~~as long as it is documented~~. Taking 'no overt action' is not the same as ignoring the problem.

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None identified.

### 4. Compliance Monitoring Process

- 4.1. The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The Performance-reset Period shall ~~be one calendar year~~ 12 months from the last violation. The Reliability Authority shall keep Interconnection Reliability Operating Limit Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- 4.3. The Reliability Authority shall have the following available upon the request of its Compliance Monitor:
  - 4.3.1. Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an Interconnection Reliability Operating Limit and the actions or directives issued for each of these instances
  - 4.3.2. Interconnection Reliability Operating Limit Violation Reports

### 5. Levels of Non-compliance <sup>2</sup>

- 5.1. Level one: Interconnection Reliability Operating Limit exceeded for a time less than or equal to  $T_v$  and no documentation to indicate actions taken or directives issued to mitigate the instance.
- 5.2. Level two: Not applicable
- 5.3. Level three: Not applicable
- 5.4. Level four: Interconnection Reliability Operating Limit exceeded for time greater than ~~or equal to~~  $T_v$  minutes

### 6. Sanctions

- ~~6.1.~~ Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. *(Attached at the end of this draft standard for reference and comment.)* Level one non-compliance sanctions, shall be the fixed dollar sanctions listed in the matrix, not the per MW sanctions. Level four non-compliance sanctions shall be the greater of the fixed dollar sanctions listed in the matrix, or the number of megawatts above the Interconnection Reliability Operating Limit multiplied by the dollar value for the number of times non-compliant.

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<sup>2</sup> Note that the Reliability Authority may choose to take ‘no overt action’ and this may be an acceptable action as long as it is documented. Taking ‘no overt action’ is not the same as ignoring the problem.



## **205 Data Specification & Collection**

### **1. Requirements**

- 1.1. The Reliability Authority shall specify and collect the data it needs to support Real-time Monitoring, Operational Planning Analyses and Real-time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits. The Reliability Authority shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Authority, and from entities that provide Facility status to the Reliability Authority. This includes specifying and collecting data from the following:
  - 1.1.1. **Balancing Authorities**
  - 1.1.2. Generator Owners
  - 1.1.3. Generator Operators
  - 1.1.4. **Load Serving Entities**
  - 1.1.5. Reliability Authorities
  - 1.1.6. Transmission Operators
  - 1.1.7. Transmission Owners
- 1.2. The Reliability Authority shall specify when to supply data (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses.)
- 1.3. The Reliability Authority shall notify its Compliance Monitor when both of the following conditions are present:
  - 1.3.1. An entity that has data needed to support Real-time Monitoring, Operational Planning **Analyses** or Real-time Assessments relative to operating within the Reliability Authority's Reliability **Authority** Area has not provided data as specified, and
  - 1.3.2. The Reliability Authority was unable to resolve the issue with the entity responsible for providing the data

### **2. Measures**

- 2.1. The Reliability Authority shall have a documented specification for data needed to build and maintain models needed to support Real time Monitoring, Operational Planning Analyses and Real-time Assessments relative to Interconnection Reliability Operating Limits.
  - 2.1.1. Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.

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- 2.1.2. Specification shall address the data provision process to use when automated Real-time system operating data is unavailable.
- 2.2. The Reliability Authority shall **have evidence it has distributed** its data specification to the entities that have Facilities monitored by the Reliability Authority and to entities that provide Facility status to the Reliability Authority.
- 2.3. The Reliability Authority shall notify its Compliance Monitor when an entity that has Facilities monitored by the Reliability Authority, or an entity that provides Facility status to the Reliability Authority, does not provide data as specified.
  - 2.3.1. The notification shall take place within five business days of discovering that the data is missing.

### 3. Regional Differences

None identified.

### 4. Compliance Monitoring Process

- 4.1. The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The Performance-reset Period shall be **one calendar year 12 months from the last violation**. The Reliability Authority shall keep its data specification(s) for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- 4.3. The Reliability Authority shall have the following available upon the request of the Compliance Monitor:
  - 4.3.1. Data specification(s)
  - 4.3.2. Proof of distribution of the data specification(s)

### 5. Levels of Non-compliance

- 5.1. Level one: Data specification incomplete (missing either the list of required data, a mutually agreeable format, a timeframe for providing data, or a data provision process to use when automated Real-time system operating data is unavailable.)
- 5.2. Level two: No data specification or the specification not distributed to the entities that have Facilities monitored by the Reliability Authority and the entities that provide the Reliability Authority with Facility status
- 5.3. Level three: Not applicable
- 5.4. Level four: Not applicable

**6. Sanctions**

- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. ~~(Attached at the end of this draft standard for reference and comment.)~~ In places where financial sanctions are applied for non-compliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## **206 Data Provision**

### **1. Requirements**

- 1.1. Each entity performing one of the following functions shall provide data, as specified, to the Reliability Authority(ies) with which it has a reliability relationship. ~~The data is limited to data needed by the Reliability Authority to support Real-time Monitoring, Operational Planning Analyses and Real-time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits.~~

1.1.1. ~~Balancing Authorities~~

1.1.2. ~~Generator Owners~~

1.1.3. ~~Generator Operators~~

1.1.4. ~~Load Serving Entities~~

1.1.5. ~~Reliability Authorities~~

1.1.6. ~~Transmission Operators~~

1.1.7. ~~Transmission Owners~~

### **2. Measures**

- 2.1. The entity responsible shall ~~have evidence it has~~ provided data, as specified, to the requesting Reliability Authority, within the time frame specified, in the mutually agreed upon format., ~~or the responsible entity shall have evidence it has committed to providing the data, as specified, to the Reliability Authority, within the timeframe specified, in the mutually agreed upon format~~

### **3. Regional Differences**

None identified.

### **4. Compliance Monitoring Process**

- 4.1. The entity responsible shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. ~~The compliance monitor shall seek confirmation of the data transmission by checking with the receiving reliability authority.~~ The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The Performance-reset Period is 12 months ~~without a violation~~ from the ~~time of the~~ last violation. The responsible entity shall keep data transmittal documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

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4.3. The entity responsible shall have the following available upon the request of the Compliance Monitor:

~~4.3.1. Evidence indicating data was sent to the Reliability Authority or evidence that the entity responsible committed to providing the data on the specification. Copies of transmittal cover letters indicating data was sent to the reliability authority.~~

### 5. Levels of Non-compliance

5.1. Level one: Not applicable

5.2. Level two: Not applicable

5.3. Level three: Not applicable

5.4. Level four: Data was not provided to the Reliability Authority as specified and the situation was not resolved with the Reliability Authority.

### 6. Sanctions

~~6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. (Attached at the end of this draft standard for reference and comment.)~~ In places where financial sanctions are applied for non-compliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollar per megawatt sanctions.

**207 Action Plan**

**1. Requirements**

- 1.1. The Reliability Authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its Interconnection Reliability Operating Limits.

**2. Measures**

- 2.1. The Reliability Authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding Interconnection Reliability Operating Limits. The plan shall **identify and** be coordinated with those entities responsible for acting and with those entities impacted by such actions.
  - 2.1.1. The action plan may be a process or procedure for preventing or mitigating instances of exceeding Interconnected Reliability Operating Limits. (Note: an emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to prevent and mitigate instances of exceeding interconnected reliability operating limits.)

**3. Regional Differences**

None identified.

**4. Compliance Monitoring Process**

- 4.1. The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- 4.2. The Performance-reset Period is 12 months **from the last violation**. The Reliability Authority shall keep its action plan for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.
- 4.3. The Reliability Authority shall make the following available for inspection by the Compliance Monitor upon request:
  - 4.3.1. Action plan

**5. Levels of Non-compliance**

- 5.1. Level one: Action plan exists but wasn't coordinated with all involved and impacted entities
- 5.2. Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities
- 5.3. Level three: Not applicable.
- 5.4. Level four: No action plan

## Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Changes to Definitions and Standard

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### 6. Sanctions

- 6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. ~~(Attached at the end of this draft standard for reference and comment.)~~ In places where financial sanctions are applied for non-compliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## **208 Reliability Authority Directives**

### **1. Requirements**

- 1.1. The Transmission Operator, Balancing Authority, And Interchange Authority shall follow the Reliability Authority's directives to:
  - 1.1.1. Prevent instances where Interconnection Reliability Operating Limits may be exceeded
  - 1.1.2. Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded
- 1.2. The entity responsible shall document the reliability authority's directives and the actions taken

### **2. Measures**

- 2.1. The entity responsible shall follow the Reliability Authority's directives and shall document the directives and actions taken to meet the directives
- 2.2. The entity responsible shall document via an operations log or other data source, the following for each directive it receives relative to an Interconnection Reliability Operating Limit:
  - 2.2.1. Date and time of directive received
  - 2.2.2. Directive issued
  - 2.2.3. Actions taken in response to directive

### **3. Regional Differences**

None identified.

### **4. Compliance Monitoring Process**

- 4.1. The entity responsible shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint to assess performance.
- 4.2. The Performance-reset Period is 12 months [from the last violation](#). The entity responsible shall keep its documentation for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.
- 4.3. The entity responsible shall make the following available for inspection by the Compliance Monitor upon request:
  - 4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a Reliability Authority directive relative to an Interconnection Reliability Operating Limit:



## Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Changes to Definitions and Standard

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4.3.1.1. Date and time of each of directive received

4.3.1.2. Directive issued

4.3.1.3. Actions taken in response to directive

### 5. Levels of Non-compliance

5.1. Level one: ~~Not applicable.~~ Entity followed Reliability Authority's directives relative to preventing or mitigating instances of exceeding Interconnection Reliability Operating Limits but did not document the data and time of each directive received, the directive received and the actions taken in response to the directive.

5.2. Level two: Not applicable.

5.3. Level three: Not applicable.

5.4. Level four: Entity did not follow the Reliability Authority's directives.

### 6. Sanctions

6.1. Apply sanctions consistent with the NERC Compliance and Enforcement Matrix. ~~(Attached at the end of this draft standard for reference and comment.)~~ In places where financial sanctions are applied for non-compliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

**Requirement 201 - Interconnection Reliability Operating Limit Identification - Do you agree with the requirement?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply	x		
William Smith Allegheny Power #1	x		
NPCC CP9 Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Joseph Knight MAPPCOR			
John Horakh MAAC #2	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1	x	x	
Tony Jankowski We Energies #4		x	Standard and requirements shall apply to only one function! There should be only one responsible function
<b>Agreed. The standard was revised so that the requirements are only applicable to the reliability authority.</b>			
Stuart Goza TVA #1		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
Susan Morris SERC #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1			
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co		x	
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Dick Spence Tracy Rolstad Steve Hitchens			
Ed Davis Entergy Services #1		x	
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5		x	
Alan Johnson Mirant Americas Energy Mktg #6		x	
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

**Requirement 201 - Interconnection Reliability Operating Limit Identification -Do you agree with the measures?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u>	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3			
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Albert DiCaprio MAAC #2	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Ed Davis Entergy Services #1		x	
Alan Johnson Mirant Americas Energy Mktg #6		x	
Tom Pruitt Duke Power #1		x	
Tony Jankowski We Energies #4		x	Where does the Buck stop?
<b>The buck stops with the reliability authority</b>			
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Charles Yeung Reliant #5		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
FRCC Op, Eng & Mkt Int Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1		x	
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

**Requirement 201 - Interconnection Reliability Operating Limit Identification - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply	x		
William Smith Allegheny Power #1	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Alan Boesch NPPD #1	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Albert DiCaprio MAAC #2	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Tony Jankowski We Energies #4		x	Only the RA should be listed.
<b>The standard was revised so the reliability authority is the only entity responsible for this requirement.</b>			
<u>Compliance Subcommittee</u>			Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

			<p>information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.</p> <p>4.2 Subsequent to the initial compliance review, the entity responsible shall demonstrate compliance through self-certification submitted to its compliance monitor annually.</p> <p>4.3 Compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, or review of information submitted as requested, at the discretion of the compliance monitor.</p> <p>Change 4.2 and 4.3 to 4.4 and 4.5</p>
<p>The suggested language changes were not adopted for the following reasons.</p> <ul style="list-style-type: none"> <li>- "Information submittal" is an undefined term. Industry commenters have asked that the compliance elements be as specific as possible so that there won't be huge variations from region to region in the application of the compliance monitoring. If an 'information submittal' is the same as a self-certification document, then this is already covered in the original language. Including language that gives each compliance monitor the flexibility to assess this requirement however it chooses, does not conform with the industry's requests for standardization in the compliance monitoring process.</li> </ul> <p>The only significant change between the original language and the proposed new section 4.2 is the addition of the concept that the compliance monitor has the freedom to either conduct an audit per a schedule, or just show up unscheduled. Again, this does not support the industry's request for increased standardization in the compliance monitoring process. The original language included the option of conducting an 'investigation upon compliant' and this seems more appropriate than unscheduled audits.</p>			
Stuart Goza TVA #1		x	
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2		x	
Charles Yeung Reliant #5		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFECC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencle Xcel Energy Joseph Knight MAPPCOR		x	
Ed Davis Entergy Services #1		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1		x	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Alan Johnson Mirant Americas Energy Mktg #6		x	
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

**Requirement 201 - Interconnection Reliability Operating Limit Identification -Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply	x		
Stuart Goza TVA #1	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Albert DiCaprio MAAC #2	x	x	
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
Tom Pruitt Duke Power #1		x	
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
Kathleen Goodman ISO-NE #2		x	
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

**Requirement 201 - Interconnection Reliability Operating Limit Identification –Other Comments**

**Summary Consideration:** While there were many comments recommending specific changes, most commenters indicated support of the requirement, its measures, the compliance monitoring process and the levels of non-compliance. The following changes were made to further improve the level of consensus on this requirement:

- The planning authority was removed from the list of functions that must comply with this requirement.
- The requirement and measures were modified to reflect that the RA must modify its lists so they reflect changes to the system.
- The compliance monitoring process was modified to change the performance reset period to '12 months from the last violation'
- An additional level of non-compliance was added to address situations where an entity may have lists but these lists have not been updated to reflect system changes.

The SDT was unable to accommodate the changes recommending that the Transmission Owner and Transmission Operator be added to this requirement. The Functional Model assigns responsibility for establishing reliability limits to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model.

Commenter	Comments
Ron Falsetti IMO #2	<p>IMO believes that the present definition of Tv, which is 'self-defined, as so broad that the re-preparation time of thirty minutes has been lost. It is unclear if this was indeed the intent based on Section 203 requirements 1.1 and 1.2 and measure 2.1.2.</p> <p>The reliability authority or planning authority identifying Tv must establish and present the process through which Tv is derived, or the re-preparation time of thirty minutes should become the standard default absent such a process.</p> <p>The reliability authority or planning authority identifying Tv in one region/area must have a peer review and dispute resolution process with its neighboring region(s)/area(s) to ensure a mutually acceptable Tv.</p> <p>Additionally, Section 1.1 suggest s the need for a demonstrated process to “. . . identify and document which facilities (or groups of facilities) in the reliability authority’s reliability area are subject to interconnection reliability operating limits.” The mechanism to determine this critical element of the definition cannot be left open-ended. Without a recognized and accepted process, significant inconsistencies will result throughout the interconnections.</p>
<p>Thirty minutes is not a 'perfect' Tv for all IROLs. Not all IROLs are the same and the risk associated with exceeding IROLs for a pre-determined period of time is not the same for all IROLs. This standard allows each RA to establish a Tv that is appropriate for each of its IROLs.</p>	
<p>The standard was revised to place responsibility for this requirement on the reliability authority. The reliability authority may use whatever processes or tools it wants to use to determine an appropriate Tv for its IROLs. There is nothing in this standard that would preclude an RA from establishing '30-minutes' as a Tv for all of its IROLs. However, industry comments have indicated a preference for allowing unique Tv,s for IROLs because this is less prohibitive to energy markets and may also be a better protector of reliability. There may be technical reasons for establishing Tv at a value other than 30 minutes.</p>	
<p>IROLs are a subset of System Operating Limits and must be developed following a standard methodology as required in the Determine Facility Ratings Standard. Peer review is not currently a requirement in the development of system operating limits.</p>	

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<p>Stuart Goza TVA #1</p>	<p>The statements in sections 1.1.1 and 1.1.2 imply that the Planning Authority Area is the same size as the Reliability Authority Area. Entities that perform planning authority functions may not cover the same geographical area as their respective reliability authorities. The statements should be changed as follows: “The reliability authority and planning authority(ies) shall...”</p> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. This Standard could be improved by formatting (where possible) Measurement 2.1 to relate to Requirement 1.1 and Measurement 2.2 to relate to Requirement 1.2, etc. rather than listing the measures and requirements arbitrarily and independently. In order to tie the OEC’s to the Measures, Section 4 should be clarified to read:</p> <p>4.3. The entity responsible shall have the following Objective Evidence for Compliance available upon the request of its compliance monitor:</p> <ul style="list-style-type: none"> <li>4.3.1. List of interconnection reliability operating limits for the reliability authority’s reliability area <b>as described in Measure 2.1 above</b></li> <li>4.3.2. List of facilities (or groups of facilities) in the reliability authority’s reliability area that are subject to interconnection reliability operating limits <b>as described in Measure 2.2 above</b></li> </ul>
<p><b>The standard was revised to indicate that the reliability authority is the only function that must comply with this requirement. The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</b></p>	
<p><u>NPCC CP9</u>  Michael Schiavone National Grid USA #1  Roger Champagne Hydro-Quebec TransEnergie #1  Ralph Rufrano New York Power Authority #1  David Little Nova Scotia Power Inc. #1  David Kiguel Hydro One Networks #1  Michael Potishnak ISO-New England #2  Barry Gee National Grid USA #1  Dan Stosick ISO-New England #2  Fernando Saavedra ISO-New England #2  Greg Campoli New York ISO #2</p>	<p>IROL will not always be known ahead of time. An unusual combination of events could create an IROL type event that was unplanned for. Some of the IROL may be time variant so the Compliance Monitoring Process section needs to address this.</p> <p>Regarding levels of compliance it is suggested that less severe levels of non-compliance be associated with incompleteness or inaccuracy of the list. NPCC suggests that compliance with only IROLs for planned system conditions be the requirement.</p>

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<b>The standard was revised to reflect these suggestions.</b>	
<p><u>Southern Co Transmission Planning #1</u>          Todd Lucas Southern Co          Joe Payne Mississippi Power Company          Travis Koval Southern Co          Bill Pope Gulf Power Company          John Clark Southern Co          David Johnson Savannah Electric          Mike Miller Southern Co          Jim Griffith Southern Co          Monroe Landrum Southern Co</p>	<p>Should Transmission Owner be added to this?</p>
<b>Under the Functional Model, the Transmission Owner is responsible for developing Facility Ratings – and the Reliability Authority has responsibility for establishing reliability limits (System Operating Limits and IROLs). In establishing the reliability limits, the RA must respect the facility ratings established by the Transmission Owner.</b>	
<p>Charles Yeung Reliant #5</p>	<p>It is unclear what a “responsible entity” is. Why are the functional model “functions” not specifically referenced in the “Measures” and “Compliance Monitoring Process” sections? Specific functions should be identified to eliminate conflict and dispute</p>
<b>The standard was revised to indicate that the reliability authority is the only entity responsible for this requirement. There are places in this standard where the term, ‘entity responsible’ is used. In these cases, more than one entity may be responsible for complying with the requirement – and a decision was made that the standard would be less cumbersome to read if the term, ‘the entity responsible’ was used rather than listing all the entities that must comply.</b>	
<p>Terry Bilke Midwest ISO #2</p>	<p>Who is ‘the entity responsible’?          It would be preferable to have limits populated in a common database available to all reliability entities so that there’s no miscommunication of limits between PA, TO and RA or misunderstanding of one RA’s impact on another. Also, the RA wouldn’t be hit with a level 4 compliance violation for failing to produce a piece of paper during a site visit.          The Planning Authority is to provide limits used by the RA. The posted functional model has no details on the planning authority. Perhaps the standard should say, the planning authority and/or Transmission Operator.</p>
<b>The standard was revised to indicate that the reliability authority is the only entity responsible for this requirement. There are places in this standard where the term, ‘entity responsible’ is used. In these cases, more than one entity may be responsible for complying with the requirement – and a decision was made that the standard would be less cumbersome to read if the term, ‘the entity responsible’ was used rather than listing all the entities that must comply.</b>	
<p>Susan Morris SERC #2          Bill Reinke SERC #2          Sam Stryker Fayettevill PWC #3, 4, 5          Carter Edge SEPA #4, 5</p>	<p>The statements in sections 1.1.1 and 1.1.2 imply that the Planning Authority Area is the same size as the Reliability Authority Area. Entities that currently perform planning authority functions do not cover the same geographical area as their respective reliability authorities. The statements should be changed as follows: “The reliability authority and planning authority(ies) shall...”</p>



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<p>Bill Thompson Dominion Trans #1</p>	<p>Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s), RA, PA(s), TSP, and TOP(s), and recommend all functional entities be identified in Standard 201 part 1.1 and 1.2.</p> <p>What happens if you identify another (unexpected) limit during real-time that is not on the list? Are you not responsible for this case as well? We all know that planning studies cannot predict all the challenges that are faced in real-time.</p> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. This Standard could be improved by formatting (where possible) Measurement 2.1 to relate to Requirement 1.1 and Measurement 2.2 to relate to Requirement 1.2, etc. rather than listing the measures and requirements arbitrarily and independently.</p> <p>In order to tie the OEC's to the Measures, Section 4 should be clarified to read:</p> <p>4.3. The entity responsible shall have the following Objective Evidence for Compliance available upon the request of its compliance monitor:</p> <p>4.3.1. List of interconnection reliability operating limits for the reliability authority's reliability area as described in Measure 2.1 above</p> <p>4.3.2. List of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits as described in Measure 2.2 above</p>
<p>The standard was revised to indicate that the reliability authority is the only function that must comply with this requirement. Under the Functional Model, each major activity must be assigned to just one function – and the functional model assigns responsibility for establishing reliability –related limits to the Reliability Authority. This does not preclude the RA from working with other entities to develop these limits, and does not preclude the RA from having to respect the facility limits established by the facility owners (Generator Owners and Transmission Owners).</p> <p>The standard was revised to address the concern that limits will need to be changed as system conditions change.</p> <p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p>	
<p>Gerald Rheault Manitoba Hydro #1, 3, 5, 6</p>	<p>Manitoba Hydro believes that it will be very difficult to identify the IROL subset from the SOLs determined for operation of the transmission facilities in the geographical footprint</p>

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	<p>for which the RA has operational responsibility. Any SOL provides protection for the worst contingency, so if the limit is respected, events such as system collapse, cascading loss of lines and other major events are extremely unlikely, unless there are multiple near-simultaneous contingencies. However, most system operating limits (SOL) could lead to significant system disturbances if they are exceeded by a large amount or exceeded for a significant period of time, or both. While any SOL will have been established such that the next contingency should not have any impacts if operation is within the SOL, operation outside of the SOL, accompanied by even one contingency, could lead to cascading loss of lines (thermal limits) or system instability (voltage or angular stability limits). It is Manitoba Hydro's belief that it is very difficult to identify such situations without exhaustive studies on very detailed models.</p> <p>The normal approach for developing system operating limits will likely incorporate some reliability margins for dealing with some of the lack of detail (for example, overcurrent protection is often not modelled, phase shifter action is assumed to occur without being studied at all possible positions) but, if system operation is to be investigated beyond such limits, small details become very important.</p> <p>It is important that NERC instill a culture of respect for limits of all types and values. There is a risk that a focus on the nebulous concept of an IROL will diffuse the respect for all other limits and the frustration of identifying such IROL's will further reduce the number classified as IROL's. NERC should clearly state how IROL's are to be identified and how NERC or the regions can address the other limits which may be important (among other things, the regional standards must either be developed through a separate standards process or flow from a NERC standard – the current proposal does not let the other limits flow from this standard).</p> <p>In item 201.2.1.1 the words at the end of this sentence (that does not already have a T<sub>v</sub>) should be removed.</p>
<p>The concept of identifying a subset of system operating limits that, if exceeded, could lead to 'evil things' is not new. The IRLs currently undergoing field testing are equivalent to the IROLs addressed in this requirement.</p> <p>Several months ago the SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p> <p>The recommended change to 201.2.1.1 was made.</p>	
<p><u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3</p>	<p>In 1.2.1 of the requirement, T<sub>v</sub> is called a "response time", but on the definition page it is called a "violation time". Consistency is needed. We did not agree with the measures because the measures state "the entity responsible" which is not specific enough. Who</p>

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<p>John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          7. Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>	<p>is the entity responsible? We do not have any problems with the steps of the compliance monitoring process, but again, the phrase "the entity responsible" is used throughout and this should be more specific. We do agree with the intent of the non-compliance level listed in 5.4; however do have a concern that it presumes that all transmission systems will have an IROL. This may not be true for radial systems. Perhaps 5.4 could be reworded as follows, "No documented analysis of possible IROLs or list of facilities subject to IROLs for the RA's reliability area was provided. Finally, Section 6, Sanctions should be removed completely. The compliance monitoring process and non-compliance levels are appropriate parts of the reliability standard. However, the sanctions and penalties are part of the compliance program and are separate. The enforcement matrix should not be attached to this document, even for information only, as that gives the appearance of being part of the standard. The sanctions and penalties, along with the enforcement matrix are the responsibility of the new Compliance and Certification Committee (CCC). If the matrix is attached to the standard, every time the CCC changes it, the standard will need to be revised which is not something we should set ourselves up to do.</p>
<p>The mismatch between the language in the standard and the definition of <math>T_v</math> has been corrected.          The standard was revised to indicate that all of the measures in this requirement must be met by the reliability authority.          If an entity has no IROLs, then its list(s) will be empty.          The levels of non-compliance could not be changed as recommended because the standard does not require that the reliability authority document its analyses conducted to identify IROLs. The analyses conducted to identify IROLs may be done on an ongoing basis, and collecting this documentation would be cumbersome.          The enforcement matrix was attached at the recommendation of NERC's Vice President and Legal Counsel to ensure that reviewers understood the penalty structure.</p>	
<p>Dan Boezio &amp; Raj Rana AEP #1, 3, 5, 6</p>	<ol style="list-style-type: none"> <li>1. In 201.1.2.1 Consider: The Reliability Authority or Planning Authority shall establish a maximum response time (<math>T_v</math>) for all Interconnected Reliability Operating Limits.</li> <li>2. In 201.5.4 "States NO list of Interconnected Reliability Operating Limits or NO list of facilities ....." Should it be "Incomplete" lists?</li> <li>3. Defined terms should be capitalized, such as "Reliability Authority", "Interconnected Reliability Operating Limits", etc.</li> <li>4. Who is the ultimate arbiter of what is the "complete list" of facilities and limits? Should the RA and PA be required to have studies available that support their IROLs or is just having a list of facilities with associated limits enough? If having studies is to be required, then what is the penalty if studies show other facilities should have had an IROL but the RA or PA did not specify a limit for that facility? Is the real concern identifying what facilities have an IROL or is it that we want to ensure that the RA does not operate in violation of identified IROLs? This version of the Standard has requirements for both, but leaves a lot of unanswered</li> </ol>

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	<p>questions.</p> <p>5. 201.1.1: How will the Reliability Authority and Planning Authority identify and document the facilities subject to operating limits jointly? What is the course of action if there is disagreement? Which functional entity has the final say? We believe the Standard should specify only one entity to be ultimately responsible. For this requirement we suggest it should be the RA. Suggested rewording: “The Reliability Authority in coordination with the Planning Authority shall identify and document . . .”</p> <p>201.1.2: Suggested rewording: “The Reliability Authority in coordination with the Planning Authority shall identify . . .”</p> <p>201.1.2.1: Suggested rewording: “The Reliability Authority in coordination with the Planning Authority shall identify a maximum . . .”</p> <p>6. 201.4.2: We believe the performance-reset period should be 12 months from the date of the infraction not one calendar year.</p> <p>7. 201.5 Levels of Non-compliance: We disagree with the SDT’s perspective that there is no gray area where partial credit is appropriate. Requirement 201 is a documentation and communication requirement, The RA needs to have documented IROLs and have such documentation of limits available to the RA system operators. As such this requirement is similar to the communication requirements 602, 604, and 606 in the “Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard.” In those requirements, it is proposed that there be multiple levels of non-compliance. We believe that is prudent and should be the case with this requirement too. As presently stated, if an RA has an incomplete list of IROLs or incomplete list of facilities requiring IROLs, he is still compliant. The RA is only non-compliant if they have “no list.” We believe this is too lenient. We suggest that the levels of non-compliance should address both completeness (all identified facilities have associated IROL and <math>T_v</math> value) and quality (all appropriate facilities have been identified and the limits and <math>T_v</math> values are reasonable).</p>
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<ol style="list-style-type: none"> <li>1. 201.1.2.1 was changed to: The reliability authority shall identify a T<sub>v</sub> for each interconnection reliability operating limit. This supports the intent of your recommended change, but also respects the comments of others who indicated the RA should be the only function assigned this responsibility.</li> <li>2. 201.5.4 was not changed to 'incomplete list' because this would be very difficult to measure objectively. Some entities have programs that run in real time to keep this list as up to date as possible, while other entities update the list through more manual processes. The standard was changed to require that the lists be updated and that entities have evidence that the lists were updated.</li> <li>3. The suggestion that defined terms be capitalized has been adopted and is reflected in the revised standard.</li> <li>4. The standard does not require that entities have a 'complete' list because this would be very difficult to measure. In addition, some entities have programs that run in real time to keep this list as up to date as possible, while other entities update the list through more manual processes. Requiring that analyses be documented could be unwieldy for entities that use automated processes.</li> <li>5. 201.1.1, 201.1.2, 201.1.2.1– The standard was revised to clarify that the Reliability Authority is the only function with responsibility for this requirement and its associated measures. The RA may work with other functions such as the Planning Authority in developing the limits, but the RA has ultimate responsibility for the limits being developed.</li> <li>6. There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.</li> <li>7. The levels of non-compliance were adjusted to give partial credit for lists that were developed but hadn't been updated. Given the dynamic nature of IROLs, it would be very difficult to objectively measure 'incomplete' lists.</li> </ol>	
<p>Tom Pruitt Duke Power #1</p>	<p>Reword measures to state what is measured and to refer to the associated requirements. Section 201.5.3 should read "List exists, but is not complete or lacks technical merit (is not good utility practice)."</p>
<p>The suggested change was not made because determining whether a list is incomplete or lacks technical merit may be difficult or impossible to measure. The standard was modified to require that the lists be updated and to require that the RA have evidence that the lists were updated – and a level three non-compliance was added to give partial credit to RAs who have lists but haven't updated them. This may be equivalent to having an 'incomplete' list.</p>	
<p><u>Operating Reliability Working Group SPP</u>          Gerry Burrows KCP&amp;L #1          Bob Cochran SPS #1          Peter Kuebeck OG&amp;E #1          Scott Moore AEP #1          Tom Stuchlik Westar #1          Dan Boezio AEP #1          Matt Bordelon CLECO #1          Mike Crouch WFEC #1</p>	<ol style="list-style-type: none"> <li>1. It is very cumbersome and can often times be very confusing when two entities are given responsibility for the same task. The requirements outlined in 1.1, 1.2 and 1.1.2 call for both the reliability authority and the planning authority to identify the facilities that have IROLs and also to identify the IROL. We suggest that the reliability authority should be ultimately responsible for identifying and quantifying the IROLs since these are operating limits. However, the reliability authority should thoroughly coordinate this effort with the planning authority. Wording such as "The reliability authority shall coordinate with the planning authority to identify..." would be better. Following this line of thought with the measures in 2.1, 2.1.1 and 2.2, wording should be changed to reflect the reliability authority's ultimate responsibility.</li> </ol>

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<p>Mike Gammon KCP&amp;L #1          Kevin Goolsby SPP #2          Bo Jones Westar #1          Allen Klassen Westar #1          Thad Ness AEP #1          Harold Wyble KCP&amp;L #1          Robert Rhodes SPP #2</p>	<p>“The reliability authority entity shall establish...” makes a better fit.</p> <ol style="list-style-type: none"> <li>The performance reset period should be changed to 12 months rather than one calendar year.</li> <li>The SDT needs to revisit the levels of non-compliance associated with this standard. If compliance is truly a black/white issue with no shades of gray as the proposed levels indicate, why not have just a level one with no financial penalty? The proposed non-compliance level implies that it may be more important to have a list of IROLs rather than a correct list of IROLs. Also, if no IROLs exist, there will be no list which would cause the reliability authority to be in non-compliant. There needs to be consistency throughout all the standards on documentation-type non-compliance.</li> </ol>
<ol style="list-style-type: none"> <li>Several commenters indicated that the RA should be the only function responsible for this requirement, and that change was made to the standard. It is still unclear as to what duties, if any, will be assigned to the Planning Authority, and the SDT elected to omit specific references to the Planning Authority in this standard.</li> <li>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: “12 months from the last violation” This change supports your recommendation.</li> <li>Several commenters indicated a need to add more levels of non-compliance, and to address ‘partial credit’ for incomplete lists. Consequently, the standard was modified to require that the lists be updated and to require that the RA have evidence that the lists were updated – and a level three non-compliance was added to give partial credit to RAs who have lists but haven’t updated them. This may be equivalent to having an ‘incomplete’ list. With respect to the appropriateness of levels of non-compliance for documentation - the SDT is only working on this standard, and doesn’t have the authority to control what is included in other standards.</li> </ol>	
<p><u>Southern Co Transmission Planning</u>          Todd Lucas Southern Co #1          Joe Payne Mississippi Pwr Co #3          Travis Koval Southern Co #1          Bill Pope Gulf Pwr Co #3          John Clark Southern Co #1          David Johnson Savannah Electric #3</p>	<p>The Transmission Owner should be added to this requirement if they can be held liable for violating IROL's.</p>
<p>The Transmission Owner is responsible for establishing facility ratings for its facilities – and that is addressed in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard. The reliability authority is the only function responsible for Requirement 201.</p>	
<p><u>MAAP Ops Subcommittee #2</u>          Llyod Linke MAPP          Allan Silk Manitoba Hydro          Paul Brune NPPD          Tod Gosnell Omaha Public Pwr Dist          Paul Koskela Minnesota Pwr</p>	<p>The requirement to produce a list of IROLs must include the notion that if the failure to identify an existing IROL results in the system experiencing cascading outages, instability, or uncontrolled separation - a consequence occurs. The requirement, as written, provides no monitoring or non-compliance provisions for the failure to properly identify an IROL – an entity is compliant if they have a list of one IROL – even if in the last year they caused multiple bulk reliability catastrophes due to not identifying other IROLs on their system.</p>

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<p>Larry Larson Otter Tail Power  Derrick Moe WAPA  Dick Pursley Great River Energy  Martin Trencle Xcel Energy  Joseph Knight MAPPCOR</p>	<p>The order of 2.1 and 2.2 should be swapped to agree with 1.1 and 1.2 order.</p>
<p>These new standards are being developed so that there should be only a single sanction for a single infraction. If an entity violates an IROL for time greater than the IROL's <math>T_v</math>, then that entity will be sanctioned for that infraction under requirement 204. Requirement 201 was revised to indicate that the lists must be updated, and an additional level of non-compliance was added to address situations where entities do not update their lists. It would be very difficult for a compliance monitor to make judgements about the technical accuracy or completeness of any entity's lists.</p> <p>The recommended reorganization of the measures was adopted and is reflected in the revised standard.</p>	
<p><u>BPA Adm TBL #1</u>  James Murphy Mike Viles  James Randall Al Johnson  Jeff Newby Jim Gronquist  Sylvia Wiggerhaus Brian Tuck  Dick Spence Tracy Rolstad  Steve Hitchens</p>	<p>Should remove planning authority to obtain a single point of responsibility. Also, Remove maximum response time and use just <math>T_v</math>, this will apply to the entire definition associated with <math>T_v</math>.</p>
<p>Both of the recommended changes were adopted and are reflected in the revised standard.</p>	
<p>Darrell Richardson Illinois Power #1, 3</p>	<p>We agree with the current list but wonder if their should be a category for an "incomplete list".</p>
<p>Several commenters indicated a need to add more levels of non-compliance, and to address 'partial credit' for incomplete lists. Consequently, the standard was modified to require that the lists be updated and to require that the RA have evidence that the lists were updated – and a level three non-compliance was added to give partial credit to RAs who have lists but haven't updated them. This may be equivalent to having an 'incomplete' list.</p>	
<p>Ed Davis Entergy Services #1</p>	<p>Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO, RA, PA, TSP, and TOP, and recommend all functional entities be identified in Standard 201 part 1.1 and 1.2.</p> <p>Standard 201 part 1.2.1 should have the "RA or PA" replaced with the "Transmission Owner or Transmission Operator" as the functional entities responsible for establishing the maximum response time (<math>T_v</math>) for any IROL that does not already have one.</p>

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	<p>In the measures sections 2.1 and 2.2, replace the “entity responsible” with the “TO, RA, PA, TSP, and TOP” as the entities establishing a list of IROLs.</p> <p>Measures section 2.1.1 should have the “entity responsible” replaced with the “TO” being responsible for establishing the maximum value of Tv.</p> <p>In the Compliance Monitoring Process section, the “entity responsible” should be replaced with the “Transmission Owner” in each occurrence of that term.</p>
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard addresses the development of both facility ratings and system operating limits. That standard requires that the equipment owners establish facility ratings, and that the facility ratings be respected in the development of system operating limits.</p> <p>The Functional Model assigns responsibility for establishing facility ratings to equipment owners (Generator Owners and Transmission Owners) – and assigns the responsibility for establishing reliability limits to the RA and limits associated with local networks to the TOP.</p> <p>The Functional Model does not preclude the delegation of activities from the RA to other functions. However, the Functional Model is built on the assumption that there is one function with ultimate responsibility for each reliability-related activity, and the Functional Model assigns the RA the responsibility for establishing reliability limits. The RA can delegate this responsibility to TOPs, but even if the RA delegates this responsibility, the RA would be held responsible for compliance with the requirement. The SDT was also concerned about completely removing the requirements for the TOP, and sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p>	
<p><u>SERC Operations Planning Subcommittee</u>  Carter Edge SEPA #4, 5  William Gaither So Carolina Pub Serv Auth #1  Mike Miller Southern Co #1  Roger Brand Muni Elec Auth GA #1  Phil Creech Progress Energy – CP&amp;L #1  Gene Delk So Carolina Elec &amp; Gas #1  Al McMeekin So Carolina Elec &amp; Gas #1  Greg Ott Alcoa-Yadkin #1  Doug Newbaue GA System Operations #1  Mike Clements TVA #1  Don Reichenbach Duke Energy #1  Lynna Estep SERC #2  Mark Creech TVA #1</p>	<ol style="list-style-type: none"> <li>8. What happens if you identify another (unexpected) limit during real-time that is not on the list? Are you not responsible for this case as well? We all know that planning studies cannot predict all the challenges that are faced in real-time.</li> <li>9. Who determines T<sub>v</sub> and what restrictions are placed on the entity establishing it?</li> <li>10. Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. This Standard could be improved by formatting (where possible) Measurement 2.1 to relate to Requirement 1.1 and Measurement 2.2 to relate to Requirement 1.2, etc. rather than listing the measures and requirements arbitrarily and independently.</li> <li>11. In order to tie the OEC’s to the Measures, Section 4 should be clarified to read:</li> <li>12. The entity responsible shall have the following Objective Evidence for Compliance available upon the request of its compliance monitor:</li> <li>13. List of interconnection reliability operating limits for the reliability authority’s reliability area <b>as described in Measure 2.1 above</b></li> </ol>



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

	<p><b>14.</b> 4.3.2. List of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits <b>as described in Measure 2.2 above</b></p>
<p>The standard was revised to indicate that the lists must be updated, but the standard does not include a provision for the compliance monitor to assess the 'quality' of the lists. Some IROLs are updated through studies, and others are updated as operating conditions change on a minute-to-minute basis.</p> <p>The reliability authority establishes the T<sub>v</sub> component of the IROL. The standard was revised to state this more clearly.</p> <p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p>	
<p>Alan Johnson Mirant Americas Energy Mktg #6</p>	<p>Don't understand why the standard references the Planning Authority and "entity responsible. Isn't the Reliability Authority the function ultimately responsible for determining IROLs?</p> <p>Also believe that section 1.2.1 should be revised to read: "The reliability authority shall identify a maximum response time (T<sub>v</sub>) for all interconnection reliability operating limits within its reliability area." Regarding the levels of non-compliance, believe there should be a level (level 3?) for a partial list of IROLs.</p>
<p>The standard was revised to clearly indicate that the reliability authority is the only function with responsibility for this requirement.</p> <p>Requirement 1.2.1 was revised as follows: The reliability authority shall identify a T<sub>v</sub> for each interconnection reliability operating limit. Several commenters indicated that including "T<sub>v</sub>" and the phrase, "maximum response time" was redundant.</p> <p>Several commenters indicated a need to add more levels of non-compliance, and to address 'partial credit' for incomplete lists. Consequently, the standard was modified to require that the lists be updated and to require that the RA have evidence that the lists were updated – and a level three non-compliance was added to give partial credit to RAs who have lists but haven't updated them. This may be equivalent to having an 'incomplete' list.</p>	
<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6</p>	<p>The Transmission Owner should be added to 201 1.1.1 and 201 1.2.1.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification**

<p>Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard addresses the development of both facility ratings and system operating limits. That standard requires that the equipment owners establish facility ratings, and that the facility ratings be respected in the development of system operating limits.</p> <p>The Functional Model assigns responsibility for establishing facility ratings with equipment owners (Generator Owners and Transmission Owners) – and assigns the responsibility for establishing reliability limits to the RA and limits associated with local networks to the TOP.</p> <p>The Functional Model does not preclude the delegation of activities from the RA to other functions. However, the Functional Model is built on the assumption that there is one function with ultimate responsibility for each reliability-related activity, and the Functional Model assigns the RA the responsibility for establishing reliability limits. The RA can delegate this responsibility to TOPs, but even if the RA delegates this responsibility, the RA would be held responsible for compliance with the requirement. The SDT was also concerned about completely removing the requirements for the TOP, and sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p>	
<p>Kathleen Goodman ISO-NE #2</p>	<p>ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact outside of the New England Area following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC within 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.</p> <p>By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.</p> <p>We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation if it cleared in less than 30 minutes.</p>

## Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 201 – IROL Identification

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This standard is based on the assumption that while all system operating limits are important, a subset of limits is most critical to the reliability of the interconnection, and exceeding these limits could lead to voltage instability, cascading outages, or uncontrolled separation. By identifying these limits in advance, system operators can pay extra attention to these limits, and can be better prepared to take (or direct) actions to prevent and mitigate instances of exceeding these limits. Some of these limits really shouldn't be exceeded for 30 minutes – and that is one of the reasons why the industry supported modifying the language that is in current Operating Policy, and allowing each RA to establish a  $T_v$  that is most appropriate to each limit.

The decision on whether or not to report an instance of exceeding an IROL is based on the length of time the IROL was exceeded. Lists of IROLs are not expected to remain static – these must be updated to conform with changes to the system.

This requirement is addressing the identification of IROLs and doesn't have anything to do with real-time performance in exceeding one of those IROLs. When an IROL is exceeded, the documentation required is that which is typically found on the system operations log, and shouldn't require any additional effort to develop. Many entities keep operations logs for an indefinite period of time – and this standard requires keeping the data for just 3 years to ensure that there is some data on site when the Compliance Monitor conducts a scheduled audit once every 3 years.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

**Requirement 202 - Monitoring - Do you agree with the requirement?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFECC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Martin Trencé Xcel Energy Joseph Knight MAPPCOR			
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Brad Calhoun			
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		
Stuart Goza TVA #1		x	
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5		x	
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3		x	
Ed Davis Entergy Services #1		x	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

**Requirement 202 - Monitoring - Do you agree with the measures?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Michael Sidiropoulos Pacificorp	x		
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFECC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Martin Trencé Xcel Energy Joseph Knight MAPPCOR			
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Brad Calhoun			
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>FRCC Op, Eng &amp; Mkt Int</u>	x	x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Ed Davis Entergy Services #1		x	
Tony Jankowski We Energies #4		x	2.3 Add in Real Time
The suggested change was implemented and is reflected in the revised standard.			

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

**Requirement 202 - Monitoring - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

<u>BPA Adm TBL #1</u> James Murphy      Mike Viles James Randall      Al Johnson Jeff Newby          Jim Gronquist Sylvia Wiggerhaus   Brian Tuck Dick Spence        Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>Compliance Subcommittee</u>			Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation of complaint) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor. Re-number 4.2 and 4.3 to 4.3 and 4.4
<p>The suggested language changes were not adopted for the following reasons.</p> <ul style="list-style-type: none"> <li>- "Information submittal" is an undefined term. Industry commenters have asked that the compliance elements be as specific as possible so that there won't be huge variations from region to region in the application of the compliance monitoring. If an 'information submittal' is the same as a self-certification document, then this is already covered in the original language. Including language that gives each compliance monitor the flexibility to assess this requirement however it chooses, does not conform with the industry's requests for standardization in the compliance monitoring process.</li> </ul> <p>The only significant change between the original language and the proposed new section 4.2 is the addition of the concept that the compliance monitor has the freedom to either conduct an audit per a schedule, or just show up unscheduled. Again, this does not support the industry's request for increased standardization in the compliance monitoring process. The original language included the option of conducting an 'investigation upon compliant' and this seems more appropriate than unscheduled audits.</p>			

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Stuart Goza TVA #1		x	
Alan Boesch NPPD #1		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
<u>Operating Reliability Working Group SPP</u>		x	
Gerry Burrows KCP&L #1			
Bob Cochran SPS #1			
Peter Kuebeck OG&E #1			
Scott Moore AEP #1			
Tom Stuchlik Westar #1			
Dan Boezio AEP #1			
Matt Bordelon CLECO #1			
Mike Crouch WFEC #1			
Mike Gammon KCP&L #1			
Kevin Goolsby SPP #2			
Bo Jones Westar #1			
Allen Klassen Westar #1			
Thad Ness AEP #1			
Harold Wyble KCP&L #1			
Robert Rhodes SPP #2			
Ed Davis Entergy Services #1		x	
<u>SERC Operations Planning Subcommittee</u>		x	
Carter Edge SEPA #4, 5			
William Gaither So Carolina Pub Serv Auth #1			
Mike Miller Southern Co #1			
Roger Brand Muni Elec Auth GA #1			
Phil Creech Progress Energy – CP&L #1			
Gene Delk So Carolina Elec & Gas #1			
Al McMeekin So Carolina Elec & Gas #1			
Greg Ott Alcoa-Yadkin #1			
Doug Newbaue GA System Operations #1			
Mike Clements TVA #1			
Don Reichenbach Duke Energy #1			
Lynna Estep SERC #2			
Mark Creech TVA #1			

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

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Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

**Requirement 202 - Monitoring - Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencle Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Charles Yeung Reliant #5		x	
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1		x	
Alan Johnson Mirant Americas Energy Mktg #6		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

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<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

**Requirement 202 - Monitoring –Other comments**

**Summary Consideration:** While there were many comments recommending specific changes, most commenters indicated support of the requirement, its measures, the compliance monitoring process and the levels of non-compliance. The following changes were made to further improve the level of consensus on this requirement:

- The requirement was re-phrased to clarify that the RA is not operating its reliability area.
- The compliance monitoring process was modified to change the performance reset period to ‘12 months from the last violation’. The compliance monitoring process was also revised to eliminate references to ‘displays’. New language was added to indicate that compliance could be demonstrated by having system operators actively monitoring and comparing real-time system operating parameters associated with interconnection reliability operating limits

The SDT was unable to accommodate the changes recommending that the Transmission Owner and Transmission Operator be added to this requirement. The Functional Model assigns responsibility for establishing reliability limits to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The SDT was also concerned about completely removing the requirements for the TOP, and sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.

Commenter	Comments
Ron Falsetti IMO #2	The term, “real-time” as used in the above {The RA shall monitor real-time system operating parameters to . . . } lacks clarity in defining how well the RA monitors data (ie how often – every 2 sec; 10 seconds, etc). As an example a RA may sample data instantly (real time), but only monitor once every 30 minutes. It is IMO’s view, such sampling frequency satisfies the above measures, however, its adequacy for maintaining reliability must be questioned.
The term, ‘real time monitoring’ was included in the list of defined terms. Several commenters suggested changes to the draft definition, and the revised definition is as follows: “The act of scanning data and drawing conclusions about what the data indicates.” The definition of real time indicates that the associated activity is occurring in the present time period. Specifying a periodicity for monitoring seems to indicate that the monitoring doesn’t need to take place on a continuous basis – and that is not what was intended.	
Stuart Goza TVA #1	It appears from the wording of this draft standard Section 202 Monitoring, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded: <div style="margin-left: 40px;">1.1. The reliability authority shall monitor real-time system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.</div> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

	<p>Section 4.3.1 is too specific for the measures it supports. It may be a practical solution that the real-time data and interconnection reliability operating limits be made available to operators in the form of a “display”, however this solution is not prescribed in the measures and should not be listed exclusively.</p> <p>Suggest that section 4.3.1 be rewritten to read:</p> <p style="color: red;">4.3.1. Process used for monitoring and comparing real time data associated with interconnection reliability operating limits in accordance with Measure 2.3 above. This may be accomplished through the use of an operator display and should demonstrate compliance with Measures 2.1 and 2.2.</p>
<p>The requirement was modified to more accurately reflect that the RA is not operating its reliability area.</p> <p>The process used to determine if an IROL is being approached or exceeded should be addressed in the RA Certification standard. This requirement is focused on whether the system operators are actively monitoring, and the ability of the compliance monitor to assess this. If the system operator is actively monitoring, that system operator can tell, in his or her own words, whether any IROLs are being approached or exceeded. If the system operator can't answer this question, then that system operator has not been actively monitoring as required. Section 4.3.1 was modified to read as follows: “System operators actively monitoring and comparing real-time system operating parameters associated with interconnection reliability operating limits.”</p>	
<p><u>Southern Co Transmission Planning #1</u>          Todd Lucas Southern Co          Joe Payne Mississippi Power Company          Travis Koval Southern Co          Bill Pope Gulf Power Company          John Clark Southern Co          David Johnson Savannah Electric          Mike Miller Southern Co          Jim Griffith Southern Co          Monroe Landrum Southern Co</p>	<p>The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".</p>
<p>Under the Functional Model, the TOP does monitor some limits, but not IROLs. While the RA may delegate responsibility for monitoring IROLs to its TOPs, the RA would still be held accountable for compliance with this requirement. Under the Functional Model, only one function is ultimately responsible for each major activity – and the Functional Model assigns the monitoring of system reliability limits to the RA, not the TOP.</p>	
<p>Terry Bilke Midwest ISO #2</p>	<p>TO's should also be monitoring this.          What if other authorities refuse to provide data or provide corrupt data to the RA? It appears the RA is accountable, which doesn't seem appropriate.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard  
Requirement 202 - Monitoring**

<p>Under the Functional Model, the TOP does monitor some limits, but not IROLs. While the RA may delegate responsibility for monitoring IROLs to its TOPs, the RA would still be held accountable for compliance with this requirement. Under the Functional Model, only one function is ultimately responsible for each major activity – and the Functional Model assigns the monitoring of system reliability limits to the RA, not the TOP.</p>	
<p>Charles Yeung Reliant #5</p>	<p>Please consider having compliance levels 1 thru 3 for this Requirement. It may be beneficial for reliability to progressively measure adherence to the Requirements for situations where a RA is implementing a phased in start up of operations or transition from existing systems to new systems.</p>
<p>For an entity to obtain RA certification, that entity must have a process in place for monitoring system parameters. These standards are being written for entities that are RAs, and there should not be a phase-in. If an entity wants to operate as an RA, then that entity must be prepared to monitor and assess system conditions. A phase-in will be recommended for the initial implementation of this standard, to give entities time to come into compliance with the new requirements and associated measures.</p>	
<p>Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1</p>	<p>Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term “reliability authority” in all of this section 202 be replaced with “reliability authority and transmission owner(s)”.</p> <p>It should also be acknowledged that entities such as the RA and the TO(s) may delegate their respective monitoring responsibilities to the TOP(s).</p> <p>In addition, it appears from the wording of this draft standard Section 202 Monitoring, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded: The reliability authority shall monitor real-time system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.</p> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</p> <p>Section 4.3.1 is too specific for the measures it supports. It may be a practical solution that the real-time data and interconnection reliability operating limits be made available to operators in the form of a “display”, however this solution is not prescribed in the measures and should not be listed exclusively.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

	<p>We suggest that section 4.3.1 be rewritten to read:</p> <p>Process used for monitoring and comparing real time data associated with interconnection reliability operating limits in accordance with Measure 2.3 above. This may be accomplished through the use of an operator display and should demonstrate compliance with Measures 2.1 and 2.2.</p>
<p>Under the Functional Model, the TOP does monitor some limits, but not IROLs. While the RA may delegate responsibility for monitoring IROLs to its TOPs, the RA would still be held accountable for compliance with this requirement. Under the Functional Model, only one function is ultimately responsible for each major activity – and the Functional Model assigns the monitoring of system reliability limits to the RA, not the TOP.</p> <p>The wording of the requirement was modified as suggested to clarify that the RA is not operating its reliability area.</p> <p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p>	
<p>Gerald Rheault Manitoba Hydro #1, 3, 5, 6</p>	<p>In 202.4.3.1, what is meant by a display ? How does one make a display available.</p>
<p>The reference to a display was dropped from the revised standard.</p>	
<p>FRCC Op, Eng &amp; Mkt Int  Linda Campbell FRCC #2  Paul Elwing Lakeland Electric #3  John Shaffer FPL #1  Bob Remley Clay Elec Coop #4  Patti Metro FRCC #2  Eirc Grant Progress Energy – FL #1  Joe Roos Ocala Electric Utility #3  Joe Krupar FL Muni Pwr Agency #3  Richard Gilbert Lakeland Electric #3  Bill Slater Progress Energy – FL #1  Amy Long Lakeland Electric #1  Roger Westphal Gainesville Regional Util #5  Bob Goss SEPA #5  Steve Wallace Seminore Electric Coop #4</p>	<p>Measure 2.3 needs to be clarified to state "The RA shall monitor real-time system operating parameters.." rather than just system operating parameters.</p> <p>We have the same concern that we identified in the comments to Requirement 201 regarding 5.4, the level of non-compliance. <i>(We do agree with the intent of the non-compliance level listed in 5.4; however do have a concern that it presumes that all transmission systems will have an IROL. This may not be true for radial systems. Perhaps 5.4 could be reworded as follows, "No documented analysis of possible IROLs or list of facilities subject to IROLs for the RA's reliability area was provided.)</i></p> <p>Section 6, Sanctions should be removed completely. The compliance monitoring process and non-compliance levels are appropriate parts of the reliability standard. However, the sanctions and penalties are part of the compliance program and are separate. The enforcement matrix should not be attached to this document, even for information only, as that gives the appearance of being part of the standard. The sanctions and penalties, along with the enforcement matrix are the responsibility of the new Compliance and Certification Committee (CCC). If the matrix is attached to the standard, every time the CCC changes it, the standard will need to be revised which is not something we should set ourselves up to do.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

Ted Hobson JEA #1	
<p>The term, 'real time' was added to measure 2.3 as suggested.          If an entity has no IROLs, then the list will be empty.          The enforcement matrix was attached at the recommendation of NERC's Vice President and Legal Counsel to ensure that reviewers understood the penalty structure.</p>	
Alan Boesch NPPD #1	<p>Step 4.3.1 appears to assume that the RA will use computer displays for real time data. What if some other method that works equally as well is used. As written this is a "how" statement. I would suggest that the statement be "Provide evidence of tools used to monitor real time data".</p>
<p>The reference to a display was dropped from the revised standard.</p>	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	<p>For clarity consider rewording 202.1.1 as "The Reliability Authority shall perform Real-time Monitoring of applicable operating parameters to determine if....."          Defined terms should be capitalized, such as "Reliability Authority", "Interconnected Reliability Operating Limits", etc.          202.4.2: The performance reset period should be 12 months from the time of the infraction not one calendar year.          Suggest combining 202.4.3 and 202.4.3.1 and rewording as: "The Reliability Authority shall have display(s) with real time data associated with interconnection reliability operating limits.</p>
<p>The requirement was modified to read, "The RA shall perform real-time monitoring of system operating parameters . . ." Adding the adjective, "applicable" would not add any clarity to the standard and was not adopted.</p>	
<p>The suggested forat change of capitalizing defined terms has been adopted and is reflected in the revised standard.</p>	
<p>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.</p>	
<p>References to displays were dropped from this standard since, under some conditions, the RA may not have displays available. The intent is for the RA to demonstrate that it is performing monitoring; therefore the revised wording for 4.3 meets this requirement. In addition, the RA must demonstrate that it has tools needed for monitoring as part of the RA Certification.</p>	
<p><u>Operating Reliability Working Group SPP</u>          Gerry Burrows KCP&amp;L #1          Bob Cochran SPS #1          Peter Kuebeck OG&amp;E #1          Scott Moore AEP #1          Tom Stuchlik Westar #1          Dan Boezio AEP #1</p>	<p>Combine 4.3 and 4.3.1 into a revised 4.3 as follows:          "The reliability authority shall have displays with real-time data associated with interconnection reliability operating limits."          The performance reset period should be changed to 12 months rather than one calendar year.          Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

<p>Matt Bordelon CLECO #1  Mike Crouch WFEC #1  Mike Gammon KCP&amp;L #1  Kevin Goolsby SPP #2  Bo Jones Westar #1  Allen Klassen Westar #1  Thad Ness AEP #1  Harold Wyble KCP&amp;L #1  Robert Rhodes SPP #2</p>	<p>directly to level four non-compliance? Is progressive non-compliance not an option? For example, if a reliability authority had identified 25 IROLs, he is level four non-compliant if only one of the IROLs is not available for real-time use. Shouldn't there be allowances for such situations? Also, perhaps a letter that lists critical displays and identifies discrepancies would be more beneficial to maintaining interconnection reliability than a monetary penalty.</p>
<p>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.</p> <p>References to displays were dropped from this standard since, under some conditions, the RA may not have displays available. The intent is for the RA to demonstrate that it is performing monitoring; therefore the revised wording for 4.3 meets this requirement. In addition, the RA must demonstrate that it has tools needed for monitoring as part of the RA Certification.</p> <p>100 of the 132 commenters were in favor of the proposed levels of non-compliance.</p>	
<p><u>Southern Co Transmission Planning</u>  Todd Lucas Southern Co #1  Joe Payne Mississippi Pwr Co #3  Travis Koval Southern Co #1  Bill Pope Gulf Pwr Co #3  John Clark Southern Co #1  David Johnson Savannah Electric #3</p>	<p>The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".</p>
<p>Under the Functional Model, the TOP does monitor some limits, but not IROLs. While the RA may delegate responsibility for monitoring IROLs to its TOPs, the RA would still be held accountable for compliance with this requirement. Under the Functional Model, only one function is ultimately responsible for each major activity – and the Functional Model assigns the monitoring of system reliability limits to the RA, not the TOP.</p>	
<p>Ed Davis Entergy Services #1</p>	<p>Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term "reliability authority" in all of this section 202 be replaced with "reliability authority and transmission owner".</p> <p>In addition, it appears from the wording of this draft standard Section 202 Monitoring, 1.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

	<p>Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded: The reliability authority shall monitor real-time system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.</p>
<p>Under the Functional Model, the TOW does not monitor limits. While the RA may delegate responsibility for monitoring IROLs to other functions, the RA would still be held accountable for compliance with this requirement. Under the Functional Model, only one function is ultimately responsible for each major activity – and the Functional Model assigns the monitoring of system reliability limits to the RA, not the TOW.</p> <p>The wording of the requirement was modified as suggested to clarify that the RA is not operating its reliability area.</p>	
<p><u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&amp;L #1 Gene Delk So Carolina Elec &amp; Gas #1 Al McMeekin So Carolina Elec &amp; Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1</p>	<p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Section 4.3.1 is too specific for the measures it supports. It may be a practical solution that the real-time data and interconnection reliability operating limits be made available to operators in the form of a “display”, however this solution is not prescribed in the measures and should not be listed exclusively. We suggest that section 4.3.1 be rewritten to read: Process used for monitoring and comparing real time data associated with interconnection reliability operating limits in accordance with Measure 2.3 above. <b>This may be accomplished through the use of an operator display and should demonstrate compliance with Measures 2.1 and 2.2.</b></p>
<p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p> <p>The proposed change was not accepted. References to displays were dropped from this standard since, under some conditions, the RA may not have displays available. The intent is for the RA to demonstrate that it is performing monitoring; therefore the revised wording for 4.3 meets this requirement. In addition, the RA must demonstrate that it has tools needed for monitoring as part of the RA Certification.</p>	
<p>Alan Johnson Mirant Americas Energy Mktg #6</p>	<p>Regarding compliance monitoring, suggest that section 4.3.2 be added to allow compliance monitor inspection of RA audited limit data. With respect to levels of non-compliance, seems that items 5.4.2 and 5.4.3 should have some sort of time boundaries</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 202 - Monitoring**

	associated with them before sanctions can be assessed. For example, is the sanction the same regardless of whether real-time data is unavailable for 5 minutes or 5 days?
<p>The compliance monitor assembles the audit data and therefore has unlimited access to the data.</p> <p>The standard was revised to clarify that real time data may be obtained from manual collection as well as from automated sources. This change was made to prevent automatic penalties for telemetry failures. Under the revised standard, the RA's data specification must address how data will be provided when there is loss of automated systems.</p>	
<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6          Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	<p>Transmission Operator should be added to 202 1.1.1</p>
<p>Under the Functional Model, the TOP does monitor some limits, but not IROLs. While the RA may delegate responsibility for monitoring IROLs to its TOPs, the RA would still be held accountable for compliance with this requirement. Under the Functional Model, only one function is ultimately responsible for each major activity – and the Functional Model assigns the monitoring of system reliability limits to the RA, not the TOP.</p>	
<p><u>Kathleen Goodman ISO-NE #2</u></p>	<p>ISO-NE believes that, as stated above, data should not be archived unless the limit is not cleared within 30 minutes. Additionally, we suggest the data retention requirement of three years be modified to a 12-month rolling retention.</p>
<p>When an IROL is exceeded, the documentation required is that which is typically found on the system operations log, and shouldn't require any additional effort to develop. Many entities keep operations logs for an indefinite period of time – and this standard requires keeping the data for just 3 years to ensure that there is some data on site when the Compliance Monitor conducts a scheduled audit once every 3 years.</p>	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

**Requirement 203 - Analyses and Assessments Do you agree with the requirement?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Raymond Mammarella PPL Elec Util #1	x		
Michael Sidiropoulos Pacificorp	x		
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2			
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Ray Palmieri ECAR Tom Vandervort NERC			
Tony Jankowski We Energies #4		x	1.2 Only for identified IROL applicable to the RA or could this assessment create a new one?
While this assessment may identify a new IROL, that is not the specific intent of this requirement. This requirement is for measuring real time data against known IROLs.			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
Tom Pruitt Duke Power #1		x	
Ed Davis Entergy Services #1		x	
Stuart Goza TVA #1		x	
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1			
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

**Requirement 203 - Analyses and Assessments - Do you agree with the measures?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 15. Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
Southern Co Transmission Planning Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Joseph Knight MAPP COR			
John Horakh MAAC #2	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Alan Boesch NPPD #1		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Robert Rhodes SPP #2			
Ed Davis Entergy Services #1		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

**Requirement 203 - Analyses and Assessments - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Michael Sidiropoulos Pacificorp	x		
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Robert Grover PPL Elec Util #3	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Sylvia Wiggerhaus Dick Spence Steve Hitchens	Brian Tuck Tracy Rolstad		
Darrell Richardson	Illinois Power #1, 3	x	
David Thorne	Pepco #1	x	
Tony Jankowski	We Energies #4		x 4.2 Not sure how the matrix resets daily?
The standard was modified so that the reset period is 12 months from the time of violation.			
<u>Compliance Subcommittee</u>			Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation of complaint) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor. Re-number 4.2 and 4.3 to 4.3 and 4.4
<p>The suggested language changes were not adopted for the following reasons.</p> <ul style="list-style-type: none"> <li>- "Information submittal" is an undefined term. Industry commenters have asked that the compliance elements be as specific as possible so that there won't be huge variations from region to region in the application of the compliance monitoring. If an 'information submittal' is the same as a self-certification document, then this is already covered in the original language. Including language that gives each compliance monitor the flexibility to assess this requirement however it chooses, does not conform with the industry's requests for standardization in the compliance monitoring process.</li> </ul> <p>The only significant change between the original language and the proposed new section 4.2 is the addition of the concept that the compliance monitor has the freedom to either conduct an audit per a schedule, or just show up unscheduled. Again, this does not support the industry's request for increased standardization in the compliance monitoring process. The original language included the option of conducting an 'investigation upon compliant' and this seems more appropriate than unscheduled audits.</p>			
Terry Bilke	Midwest ISO #2		x
Stuart Goza	TVA #1		x
Susan Morris Bill Reinke Sam Stryker Carter Edge Bill Thompson	SERC #2 SERC #2 Fayettevill PWC #3, 4, 5 SEPA #4, 5 Dominion Trans #1		x
FRCC Op, Eng & Mkt Int			x

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Tom Pruitt Duke Power #1		x	
Ed Davis Entergy Services #1		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

**Requirement 203 - Analyses and Assessments - Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
Centerpoint Energy #1 Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6          Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	<p>x</p>		
<p>Terry Bilke Midwest ISO #2</p>		<p>x</p>	
<p>Susan Morris SERC #2          Bill Reinke SERC #2          Sam Stryker Fayettevill PWC #3, 4, 5          Carter Edge SEPA #4, 5          Bill Thompson Dominion Trans #1</p>		<p>x</p>	
<p><u>FRCC Op, Eng &amp; Mkt Int</u>          Linda Campbell FRCC #2          Paul Elwing Lakeland Electric # 3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>		<p>x</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<p><u>SERC Operations Planning Subcommittee</u>  Carter Edge SEPA #4, 5  William Gaither So Carolina Pub Serv Auth #1  Mike Miller Southern Co #1  Roger Brand Muni Elec Auth GA #1  Phil Creech Progress Energy – CP&amp;L #1  Gene Delk So Carolina Elec &amp; Gas #1  Al McMeekin So Carolina Elec &amp; Gas #1  Greg Ott Alcoa-Yadkin #1  Doug Newbaue GA System Operations #1  Mike Clements TVA #1  Don Reichenbach Duke Energy #1  Lynna Estep SERC #2  Mark Creech TVA #1</p>		x	
<p>Alan Boesch NPPD #1</p>		x	
<p><u>Operating Reliability Working Group SPP</u>  Gerry Burrows KCP&amp;L #1  Bob Cochran SPS #1  Peter Kuebeck OG&amp;E #1  Scott Moore AEP #1  Tom Stuchlik Westar #1  Dan Boezio AEP #1  Matt Bordelon CLECO #1  Mike Crouch WFEC #1  Mike Gammon KCP&amp;L #1  Kevin Goolsby SPP #2  Bo Jones Westar #1  Allen Klassen Westar #1  Thad Ness AEP #1  Harold Wyble KCP&amp;L #1  Robert Rhodes SPP #2</p>		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

**Requirement 203 - Analyses and Assessments - Other comments?**

**Summary Consideration:** While there were many comments recommending specific changes, most commenters indicated support of the requirement, and its measures. There were several suggestions for changing the compliance monitoring process and the levels of non-compliance so they better align with the measures and so the levels of non-compliance eliminate sanctions for the temporary loss of telemetry.

The following changes were made to further improve the level of consensus on this requirement:

- The requirement and measures were modified to clarify that the RA is not ‘operating’ its reliability area but instead is monitoring it.
- The compliance monitoring process was modified to change the performance reset period to ‘12 months from the last violation’.
- The compliance monitoring process was also modified to eliminate the need to demonstrate the ability to conduct operational planning analyses and real time assessments – and to add language to indicate that the RA needs to be able to identify that it has conducted an operational planning analysis and real time assessments.
- Levels of non-compliance were adjusted to conform to the new language used to identify how the RA could demonstrate it is in compliance.

The SDT was unable to accommodate the changes recommending that the Transmission Owner and Transmission Operator be added to this requirement. The Functional Model assigns responsibility for monitoring operating reliability limits to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model.

Commenter	Comments
Terry Bilke Midwest ISO #2	<p>There can be up to 365 of both “real time assessment’ and ‘planning analysis’ violations in a year. Although it’s not likely many will occur, probably every RA will have occurrences of data transmission problems or EMS outages of 30 minutes in a year. Keep in mind the RA relies on data provided by others.</p> <p>Since this is self-reported, its akin to a person sending an annual letter to their state patrol telling them how many times they were speeding during the year so that they can receive back the proper number of tickets in the mail.</p> <p>To accrue a level 4 violation for each data hiccup or EMS outage doesn’t seem appropriate.</p>
	<p>There were several commenters who suggested changes to the performance reset period, and the standard was revised so that all requirements in this standard have the following language: “12 months from the last violation” This change supports your recommendation.</p> <p>Self-certification is just one method used to demonstrate compliance. The compliance monitor is also required to conduct an audit and may use investigations upon complaint to see if this requirement is being met.</p> <p>The language in the standard was revised so that there is not an automatic sanction for the temporary loss of data. Sanctions are tied to the inability to demonstrate that analyses and assessments were conducted.</p>
Ron Falsetti IMO #2	<p>The standard must provide a clear distinction between i) how often IROL’s are assessed, whether in real time or for operational planning analyses and ii) how quickly an IROL violation must be resolved. Requirement 1.2 “ . . . to verify that it is not</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard  
Requirement 203 - Analyses**

	<p>exceeding any interconnection reliability operating limits” can be, in IMO’s opinion, interrupted as to how quickly an IROL violation must be resolved . . . ie: each time it is detected in real-time, which shall be within 30 minutes or less in accordance with measure 2.1.2. This requirement belongs in section 201.</p>
<p>Requirement 202 requires that the RA perform real-time monitoring of system operating parameters to determine if its reliability area is operating within its interconnection reliability operating limits.</p> <p>Requirement 203 (this requirement) addresses the minimum frequency for conducting operational planning analyses and real time assessments to assess whether the planned bulk electric system operations within the reliability authority’s reliability area will exceed any of its interconnection reliability operating limits and to determine if the RA’s reliability area is exceeding any interconnection reliability operating limits or is expected to exceed any interconnection reliability operating limits</p> <p>Each IROL has an associated <math>T_v</math> – <math>T_v</math> represents the maximum time that an IROL can be exceeded without compliance sanctions being applied. This is addressed in Requirement 204 – Actions. The <math>T_v</math> is the element that determines how much time the RA has to resolve an IROL – and it is not necessarily 30 minutes.</p>	
<p>Stuart Goza TVA #1</p>	<p>It appears from the wording of this draft standard Section 203 Analysis and Assessments, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:</p> <p>1.1. The reliability authority shall perform operational planning analyses to verify that the planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.</p> <p>The wording of Item 1.2 should also be revised:</p> <p>1.2. The reliability authority shall perform real-time assessments to verify that <b>the power system</b> it is not exceeding any interconnection reliability operating limits.</p> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</p> <p>Section 4.3 should be rewritten to read:</p> <p>4.3. <b>The reliability authority shall demonstrate in accordance with Measure 2.1, the following upon the request of the compliance monitor:</b></p> <p>4.3.1. <b>Ability to perform an operational planning analysis</b></p> <p>4.3.2. <b>Ability to perform a real time assessment</b></p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

1.1 was revised as follows: "The Reliability Authority shall assess whether the planned Bulk Electric System operations within the Reliability Authority's Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits." Although this does not match your suggested change on a word-for-word basis, it supports the intent of your suggestion.

1.2 was revised as follows: "The reliability authority shall perform real-time assessments to verify that it is not determine if its reliability authority area is exceeding any interconnection reliability operating limits or is expected to exceed any interconnection reliability operating limits." Although this does not match your suggested change on a word-for-word basis, it supports the intent of your suggestion.

The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.

Kathleen Goodman ISO-NE #2  
NPCC CP9  
 Michael Schiavone National Grid USA #1  
 Roger Champagne Hydro-Quebec TransEnergie #1  
 Ralph Rufrano New York Power Authority #1  
 David Little Nova Scotia Power Inc. #1  
 David Kiguel Hydro One Networks #1  
 Michael Potishnak ISO-New England #2  
 Barry Gee National Grid USA #1  
 Dan Stosick ISO-New England #2  
 Fernando Saavedra ISO-New England #2  
 Greg Campoli New York ISO #2

NPCC (ISO-NE) requests the drafting team to provide their thoughts and incorporate allowances in the compliance area for EMS "down time" for maintenance or to switch over to backup system should problems arise.

Although we agree with the measures stated, we would suggest that more frequent in-day analyses based on changed system conditions to predict system performance in the coming hours be required.

The compliance monitoring process and the levels of non-compliance were adjusted so that there should not be any 'automatic' sanctions for temporary loss of telemetry. The revisions made to the standard improve the links between the compliance monitoring process, the levels of non-compliance and the measures.

The standard does set 'minimum' requirements. An RA observing changing system conditions needs to monitor and assess its system more closely, but this is difficult to convey in a standard that must have objective measures.

Southern Co Transmission Planning #1  
 Todd Lucas Southern Co  
 Joe Payne Mississippi Power Company  
 Travis Koval Southern Co  
 Bill Pope Gulf Power Company  
 John Clark Southern Co  
 David Johnson Savannah Electric  
 Mike Miller Southern Co

The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<p>Jim Griffith Southern Co Monroe Landrum Southern Co</p>	
<p>The Functional Model assigns the RA responsibility for performing reliability analyses and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The Transmission Operator is responsible for local network integrity, not the reliability of the bulk transmission system.</p>	
<p>Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1</p>	<ol style="list-style-type: none"> <li>1. Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term “reliability authority” in all of this section 203 be replaced with “reliability authority and transmission owner(s)”.</li> <li>2. In addition, it appears from the wording of this draft standard Section 203 Analysis and Assessments, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:  <ul style="list-style-type: none"> <li>The reliability authority shall perform operational planning analyses to verify that the planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.</li> </ul> </li> <li>3. The wording of Item 1.2 should also be revised to make it clear the RA and TO(s) verify the power system operation is not exceeding IROL limits:  <ul style="list-style-type: none"> <li>The reliability authority shall perform real-time assessments to verify that the power system it is not exceeding any interconnection reliability operating limits.</li> <li>The transmission owner(s) shall perform real-time assessments to verify its equipment is not exceeding any interconnection reliability operating limits.</li> </ul> </li> <li>4. Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.  Section 4.3 should be rewritten to read:  <ul style="list-style-type: none"> <li>4.3. The reliability authority shall demonstrate in accordance with Measure 2.1, the following upon the request of the compliance monitor: <ul style="list-style-type: none"> <li>4.3.1. Ability to perform an operational planning analysis</li> <li>4.3.2. Ability to perform a real time assessment</li> </ul> </li> </ul> </li> </ol>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<ol style="list-style-type: none"> <li>1. The Functional Model assigns the RA responsibility for performing reliability analyses and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The Transmission Owner is responsible for establishing transmission facility ratings, but is not assigned any responsibility for conducting reliability analyses.</li> <li>2. The intent of the suggested revision to requirement 1.1 is reflected in the changes made to the standard. The requirement was revised as follows: The reliability authority shall perform operational planning analyses to <del>verify that its</del> <b>assess whether the</b> planned bulk electric system operations <b>within the reliability authority's reliability authority area</b> will <del>not</del> exceed any of its interconnection reliability operating limits.</li> <li>3. The TOW was not added to the list of functions that must comply with requirement 203.1.2 because under the Functional Model the Transmission Owner is not responsible for conducting reliability assessments.</li> <li>4. The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures –and in many cases this is not true.</li> </ol>	
<p>Gerald Rheault Manitoba Hydro #1, 3, 5, 6</p>	<p>In item 203.1.1 the words “will not exceed” are used. The correct phrase should be “should not exceed” since the ability to predict is only valid for events studied, not for unanticipated system conditions.</p> <p>In item 203.2.1.1, there should be a statement indicating the range of studies required. Should the contingencies applicable to SOL's be used or should the range of studies be broader?</p>
<p>Requirement 203.1.1 was revised as follows: “The reliability authority shall perform operational planning analyses to <del>verify that its</del> <b>assess whether the</b> planned bulk electric system operations <b>within the reliability authority's reliability authority area</b> will <del>not</del> exceed any of its interconnection reliability operating limits.”</p> <p>While the revised wording does not match word-for-word the suggested change, the intent of the recommended change is supported in the revisions that were made.</p> <p>Different RAs use different tools to conduct these analyses, and specifying what tools should be used seems beyond the scope of this standard. Note that the standard does not require any specific ‘study’.</p>	
<p><u>FRCC Op, Eng &amp; Mkt Int</u>          Linda Campbell FRCC #2          Paul Elwing Lakeland Electric # 3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1</p>	<ol style="list-style-type: none"> <li>1. In 1.1 it states that the RA is performing operational planning analyses to "verify that its planned bulk electric system operations will not exceed.." Is that really what they are doing? It would seem to us that this operation planning is being done to determine if there is a potential problem so that actions can be directed to alleviate or mitigate the problem so that IROL violations will not occur. The SDT may want to consider rewording this for clarification.</li> <li>2. Also, 1.2 states that real time assessments are to verify that it is not exceeding IROLs. Again, verify does not seem to be the correct word.</li> </ol>



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<p>Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>	<ol style="list-style-type: none"> <li>3. The reason we have stated that we do not agree with the compliance monitoring process is that the performance reset period of one day seems much too frequent. Even though the measures are to be done daily, the performance monitoring period should not be more often than monthly. If one day is kept, it would be a great burden on both the RA and the compliance monitor and we are not sure that would really improve reliability.</li> <li>4. Since we believe the reset period should be monthly, the non-compliance levels should be adjusted to reflect level one for a small number of days, and level 4 being every day of the month.</li> <li>5. We also have a question about 5.4 level of non-compliance for operational planning. Does the SDT assume these analyses are load flow studies? If so, we agree with the daily measure. However; if the intent was to also include daily stability studies, we do not agree. Stability studies should only be required to be performed annual and prior to scheduled maintenance outages that create potential for IROLs. Please see our earlier comments about section 6 - Sanctions.</li> </ol>
<ol style="list-style-type: none"> <li>1. Requirement 203.1.1 was revised to reflect the suggested change: “The reliability authority shall perform operational planning analyses to <del>verify that its assess whether the</del> planned bulk electric system operations <del>within the reliability authority's reliability authority area will not</del> exceed any of its interconnection reliability operating limits.”</li> <li>2. Requirement 203.1.2 was revised to reflect the suggested change: “The reliability authority shall perform real-time assessments to <del>verify that it is not determine</del> if its reliability authority area is exceeding any interconnection reliability operating limits <del>or is expected to exceed any interconnection reliability operating limits.</del>”</li> <li>3. There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: “12 months from the last violation” The 12 months was adopted because several entities indicated that shorter periods would be unwieldy for all involved in the process.</li> <li>4. Levels of non-compliance were adjusted to conform to the new language used to identify how the RA could demonstrate it is in compliance.</li> <li>5. The standard does not specify what analyses the RA must use – only that analyses and assessments must be conducted. It would be unrealistic to expect the RA to conduct a stability study each day, and this is not what was intended.</li> </ol>	
<p>Alan Boesch NPPD #1</p>	<p>Why was 30 minutes used for a real time assessment? Is one day a good target to be performing planning Analysis? If a generator or transmission operator is planning an outage will the RA tell the generator or transmission operator the day before the outage that is OK to proceed with the outage? Is that process covered in some other standard?</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

The 30 minute timeframe for conducting real-time assessments was suggested to the industry as the minimum timeframe between assessments. Current Operating Policy (Policy 9) requires that an operational planning analysis be conducted at least once each day looking at the day ahead.

The collection of data needed to conduct an operational planning analysis and a real-time assessment is addressed in the data specification requirement of this standard. In that requirement, the RA must document what data it needs, and when it needs that data – and data associated with outages should be included in that data specification

Dan Boezio & Raj Rana AEP #1, 3, 5, 6

1. Wording of 203.1 implies that a specific favorable outcome of Operational Planning Analyses and Real-time Assessments is required. Consider reword as:  
 203.1.1 The Reliability Authority shall perform Operational Planning Analyses to assess if the planned Bulk Electric System operations will result in any of its Interconnection Reliability Operating Limits being exceeded. The Reliability Authority will modify planned operations if analyses indicate such a violation.  
 203.1.2 The Reliability Authority shall perform Real-time assessments to assess if any Interconnection Reliability Operating Limits are being exceeded. Any identified violated will be addressed immediately.
2. Defined terms should be capitalized, such as “Reliability Authority”, “Operational Planning Analyses”, “Interconnected Reliability Operating Limits”, etc
3. 203.4 Compliance Monitoring Process: Today we require the Reliability Coordinators to have available for review and investigation study case results and related documentation for a rolling three month period (refer to compliance template P9 T1). Maintaining this compliance requirement may prove beneficial during investigations due to complaints and would not add any additional reporting burden beyond today’s process.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard  
Requirement 203 - Analyses**

<p>1. Requirement 203.1.1 was revised to reflect the first part of the suggested change: “The reliability authority shall perform operational planning analyses to <del>verify that its</del> assess whether the planned bulk electric system operations within the reliability authority’s reliability authority area will <del>not</del> exceed any of its interconnection reliability operating limits.”</p> <p>The second part of the suggested change was not made because taking action based on the results of the operational planning analysis or as a result of a real-time assessment is addressed in Requirement 204 – Actions.</p> <p>Requirement 203.1.2 was revised to reflect the first part of the suggested change: “The reliability authority shall perform real-time assessments to <del>verify that it is not determine</del> if its reliability authority area is exceeding any interconnection reliability operating limits or is expected to exceed any interconnection reliability operating limits.”</p> <p>The second part of the suggested change was not made because taking action based on the results of the operational planning analysis or as a result of a real-time assessment is addressed in Requirement 204 – Actions.</p> <p>2. The suggested format change of capitalizing defined words has been adopted and is reflected in the revised standard.</p> <p>3. RA Certification requires that the RA have tools in place to conduct analyses. This requirement is looking at whether or not the RA is using these tools on a regular basis as an aid in protecting reliability. The Compliance Monitoring section of this requirement was revised to focus more on the real-time use of these tools.</p>	
<p>Tom Pruitt Duke Power #1</p>	<p>Modify section 203.1.1 to read "The reliability authority shall perform, or direct performance of, operational planning analyses . . . ". Modify 203.4.2 to read "The performance-reset period shall be one year. The . . ."</p>
<p>For consistency, the phrase, “or direct . . .” is being used where the Functional Model indicates that the RA directs others. For this requirement, the Functional Model assigns sole responsibility for conducting reliability analyses to the RA, so the phrase, “. . .or direct” was not added. The RA may delegate any of its tasks to others, but the standards are not being written to suggest this delegation.</p> <p>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: “12 months from the last violation”</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<p><u>Operating Reliability Working Group SPP</u>          Gerry Burrows KCP&amp;L #1          Bob Cochran SPS #1          Peter Kuebeck OG&amp;E #1          Scott Moore AEP #1          Tom Stuchlik Westar #1          Dan Boezio AEP #1          Matt Bordelon CLECO #1          Mike Crouch WFEC #1          Mike Gammon KCP&amp;L #1          Kevin Goolsby SPP #2          Bo Jones Westar #1          Allen Klassen Westar #1          Thad Ness AEP #1          Harold Wyble KCP&amp;L #1          Robert Rhodes SPP #2</p>	<p>The proposed measures may be too weak. For example, it appears that a reliability authority could satisfy the operational planning analysis by evaluating an invalid case for a given day. While it meets the letter of the measure, it doesn't meet the intent of the measure. Also, does 2.1.2 apply to IROLs that are associated with stability limits? If so, this measure would require a reliability authority to run real-time stability analyses every 30 minutes.</p> <p>Again the issue of degrees of non-compliance surfaces. Are there shades of gray with non-compliance for this standard or is it strictly a black and white issue? Why jump directly to level four non-compliance? Is progressive non-compliance not an option? Is missing an operational planning assessment one day in a month as detrimental as missing it 10-15 days per month? Similarly, is missing one real-time assessment as bad for reliability as missing these assessments for hours, on a regular basis?</p>
<p>The term, 'analysis' is not synonymous with 'study.' IROLs may be associated with stability limits, but this does not mean that a stability study needs to be conducted every 30 minutes. The standard does not specify what tools must be used to conduct the analysis or the assessment – this is left up to the RA.</p> <p>The levels of non-compliance were adjusted to reflect changes to the compliance monitoring process. Under the revised standard, a level three non-compliance was added.</p>	
<p>BPA Adm TBL #1          James Murphy Mike Viles          James Randall Al Johnson          Jeff Newby Jim Gronquist          Sylvia Wiggerhaus Brian Tuck          Dick Spence Tracy Rolstad          Steve Hitchens</p>	<p>2.1.1 There should be no time frame, as long as the analysis is done prior to the need it shouldn't matter.</p> <p>5.1 Remove - to indicate actions taken or directives issued to mitigate the instance. This additional verbage is not needed, the discription of the documentation is already covered in the requirements.</p> <p>5.4 Remove at least once each day.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

The timeframe is needed to ensure that all RAs commit to doing these analyses and assessments on a regular basis. The timeframes suggested represent the minimum acceptable timeframes. Note that the operational planning analysis does not need to be a detailed, documented study – it merely needs to “. . . examine the expected system conditions, given the load forecast(s), known system constraints such as facility outages, and generator outages and limitations, etc. “

The comment about 5.1 is addressing Requirement 204. When these new standards are fully developed, they will be available to the industry through a relational database. We are trying to maintain enough clarity in the measures so that if these were downloaded as a result of a query (e.g. – a report of all measures which the RA is responsible for meeting), the measures would contain enough definition to be understandable.

Darrell Richardson Illinois Power #1, 3

We agree with this but think there should possibly be some room for “extenuating circumstances” (i.e., computer problems, in middle of restoration, etc.).

The requirement was revised to shift emphasis from demonstrating that the tools used to conduct analyses and assessments were working to demonstrating that the analyses and assessments were being conducted by humans, using whatever methods available. This shift in emphasis supports your suggestion.

Ed Davis Entergy Services #1

1. Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term “reliability authority” in all of this section 203 be replaced with “reliability authority and transmission owner”.
2. In addition, it appears from the wording of this draft standard Section 203 Analysis and Assessments, 1. Requirements, Item 1.1 that the RA is operating the power system. This requirement must be reworded:  
 The reliability authority shall perform operational planning analyses to verify that the planned bulk electric system operations will not exceed any of its interconnection reliability operating limits.
3. The wording of Item 1.2 should also be revised to make it clear the RA and TO verify the power system operation is not exceeding IROL limits:  
  
 1.2. The reliability authority shall perform real-time assessments to verify that the power system is not exceeding any interconnection reliability operating limits. The transmission owner shall perform real-time assessments to verify its equipment is not exceeding any interconnection reliability operating limits.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

The Functional Model assigns the RA responsibility for performing reliability analyses and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The Transmission Owner is responsible for establishing transmission facility ratings, but is not assigned any responsibility for conducting reliability analyses.

The intent of the suggested revision to requirement 1.1 is reflected in the changes made to the standard. The requirement was revised as follows: The reliability authority shall perform operational planning analyses to ~~verify that its~~ assess whether the planned bulk electric system operations within the reliability authority's reliability authority area will ~~not~~ exceed any of its interconnection reliability operating limits.

The TOW was not added to the list of functions that must comply with requirement 203.1.2 because under the Functional Model the Transmission Owner is not responsible for conducting reliability assessments.

SERC Operations Planning Subcommittee

- Carter Edge SEPA #4, 5
- William Gaither So Carolina Pub Serv Auth #1
- Mike Miller Southern Co #1
- Roger Brand Muni Elec Auth GA #1
- Phil Creech Progress Energy – CP&L #1
- Gene Delk So Carolina Elec & Gas #1
- Al McMeekin So Carolina Elec & Gas #1
- Greg Ott Alcoa-Yadkin #1
- Doug Newbaue GA System Operations #1
- Mike Clements TVA #1
- Don Reichenbach Duke Energy #1
- Lynna Estep SERC #2
- Mark Creech TVA #1

Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.

Section 4.3 should be rewritten to read:

The reliability authority shall demonstrate in accordance with Measure 2.1, the following upon the request of the compliance monitor:

- 4.3.1. Ability to perform an operational planning analysis
- 4.3.2. Ability to perform a real time assessment

The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 203 - Analyses**

<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6          Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	<p>The Transmission Operator should be added to 203 1.1.1, 203 1.1.2, 203 2.2.1.</p>
<p>The Functional Model assigns the RA responsibility for performing reliability analyses and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The Transmission Operator is responsible for local network integrity, not the reliability of the bulk transmission system.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

**Requirement 204 - Actions - Do you agree with the requirement?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u>	x		
James Murphy Mike Viles			
James Randall Al Johnson			
Jeff Newby Jim Gronquist			
Sylvia Wiggerhaus Brian Tuck			
Dick Spence Tracy Rolstad			
Steve Hitchens			
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
SERC Operations Planning Subcommittee	x		
Carter Edge SEPA #4, 5			
William Gaither So Carolina Pub Serv Auth #1			
Mike Miller Southern Co #1			
Roger Brand Muni Elec Auth GA #1			
Phil Creech Progress Energy – CP&L #1			
Gene Delk So Carolina Elec & Gas #1			
Al McMeekin So Carolina Elec & Gas #1			
Greg Ott Alcoa-Yadkin #1			
Doug Newbaue GA System Operations #1			
Mike Clements TVA #1			
Don Reichenbach Duke Energy #1			
Lynna Estep SERC #2			
Mark Creech TVA #1			
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u>	x		
Richard Sikes			
John Jonte			
Wayne Kemper			
Glenn Hemperley			
Brad Calhoun			

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

**Requirement 204 - Actions - Do you agree with the measures**

Commenter	Yes	No	Comments
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

Ray Palmieri ECAR Tom Vandervort NERC			
Terry Bilke Midwest ISO #2		x	
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR		x	
SERC Operations Planning Subcommittee Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Kathleen Goodman ISO-NE #2		x	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

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<p><u>FRCC Op, Eng &amp; Mkt Int</u>  Linda Campbell FRCC #2  Paul Elwing Lakeland Electric # 3  John Shaffer FPL #1  Bob Remley Clay Elec Coop #4  Patti Metro FRCC #2  Eirc Grant Progress Energy – FL #1  Joe Roos Ocala Electric Utility #3  Joe Krupar FL Muni Pwr Agency #3  Richard Gilbert Lakeland Electric #3  Bill Slater Progress Energy – FL #1  Amy Long Lakeland Electric #1  Roger Westphal Gainesville Regional Util #5  Bob Goss SEPA #5  Steve Wallace Seminore Electric Coop #4  Ted Hobson JEA #1</p>		<p>x</p>	
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

**Requirement 204 - Actions - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric #3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencé Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

Steve Hitchens			
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6          Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	<p>x</p>		
<p><u>Compliance Subcommittee</u></p>			<p>Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.          Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor.          Re-number 4.2 and 4.3 to 4.3 and 4.4</p>
<p>The suggested language changes were not adopted for the following reasons.</p> <ul style="list-style-type: none"> <li>- "Information submittal" is an undefined term. Industry commenters have asked that the compliance elements be as specific as possible so that there won't be huge variations from region to region in the application of the compliance monitoring. If an 'information submittal' is the same as a self-certification document, then this is already covered in the original language. Including language that gives each compliance monitor the flexibility to assess this requirement however it chooses, does not conform with the industry's requests for standardization in the compliance monitoring process.</li> </ul> <p>The only significant change between the original language and the proposed new section 4.2 is the addition of the concept that the compliance monitor has the freedom to either conduct an audit per a schedule, or just show up unscheduled. Again, this does not support the industry's request for increased standardization in the compliance monitoring process. The original language included the option of conducting an 'investigation upon compliant' and this seems more appropriate than unscheduled audits.</p>			
<p>Terry Bilke Midwest ISO #2</p>		<p>x</p>	
<p>Stuart Goza TVA #1</p>		<p>x</p>	
<p><u>Operating Reliability Working Group SPP</u></p>		<p>x</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2			
SERC Operations Planning Subcommittee Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

**Requirement 204 - Actions - Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		

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Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Stuart Goza TVA #1		x	
Alan Boesch NPPD #1		x	
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Terry Bilke Midwest ISO #2		x	
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
Kathleen Goodman ISO-NE #2		x	

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**Requirement 204 - Actions – Other comments**

**Summary Consideration:** While there were many comments recommending specific changes, most commenters indicated support of the requirement, its measures and compliance elements. There were several suggestions for changing the levels of non-compliance so they better align with the measures. The following changes were made to further improve the level of consensus on this requirement:

- The requirement was revised to clarify how to measure the duration of an ‘event’.
- To conform with the requested changes to the definition of  $T_v$ , the requirement was changed to clarify that only instances of exceeding (rather than meeting or exceeding) the  $T_v$  need to be reported to the compliance monitor.
- The measures were revised to add more explanatory text to clarify the circumstances under which the measure is applicable
- The compliance monitoring process was modified to change the performance reset period to ‘12 months from the last violation’.
- Levels of non-compliance were adjusted to conform to the new language used for  $T_v$

The SDT was unable to accommodate the changes recommending that the RA be exempt from sanctions if the RA directed to take actions, but those actions did not achieve the desired results and an IROL was exceeded for a time greater than  $T_v$ . The industry is divided on this issue – and 20 of the 125 respondents indicated a preference for exempting the RA from sanctions if the RA directed others to take action and those actions either weren’t taken or didn’t achieve the desired results.

The SDT was unable to accommodate the changes recommending that the RA not be held accountable for exceeding an IROL. Several commenters indicated that the measures require only documentation and reporting, and don’t address instances of exceeding an IROL. Measures are elements the Compliance Managers use to determine if the requirement has been met. The Compliance Managers do not have access to the real-time data that would indicate instances of approaching or exceeding IROLs. The documentation and reports required in the measures are the physical evidence the compliance managers need to assess compliance with the requirement. The requirement clearly indicates that the RA shall act or direct others to act to prevent or mitigate instances of exceeding IROLs and shall document these actions.

Commenter	Comments
Terry Bilke Midwest ISO #2	<p>In this section, the RA gets a level 4 compliance violation if a limit is exceeded, the RA takes action and the limit is exceeded for <math>T_v</math>. It appears the RA is accountable if they take timely action (direct corrective measures) and the other authorities (IA, BA, TO) fail to respond.</p> <p>Also it appears that the same penalty is assessed whether the RA failed to act for one event or 100 events for the year.</p>
	<p>The seriousness of exceeding an IROL for a time greater than the IROL’s <math>T_v</math> seems to warrant a serious sanction. An IROL should not be exceeded for any length of time. In this posting cycle, the SDT provided its reasoning for having this infraction be a level four non-compliance, and most of the commenters indicated support for this position.</p> <p>The compliance sanctions table is multidimensional and is built to apply more stringent sanctions for successive instances of non-compliant behavior within a performance reset period. The sanction applied for a single instance of exceeding an IROL for time greater than <math>T_v</math> is much less than for the fourth instance in a 12 month period.</p>
Stuart Goza TVA #1	RA should only be penalized if the RA failed to direct action. If an operating entity fails to implement the directed action then the RA should not be penalized (if the RA does not have direct operational control.)

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	<p>Section 5.4 should be amended to include “and RA failed to direct action.”</p> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</p> <p>Section 4.3 should be re-written to read:</p> <p style="padding-left: 40px;">4.3. The reliability authority shall have the following available upon the request of its compliance monitor:</p> <p style="padding-left: 80px;">4.3.1. Operations logs or other documentation <b>in accordance with Measure 2.1</b> and the actions or directives issued for each of these instances</p> <p style="padding-left: 80px;">4.3.2. Interconnection Reliability Operating Limit Violation Reports <b>completed in accordance with Measure 2.2</b></p>
<p>Under the Functional Model, the RA has ultimate responsibility for reliability of the bulk electric system. The RA needs to have agreements in place with the entities operating under the RA’s direction as part of the RA Certification process – and these agreements need to address the RA’s authority with respect to these other entities. Most of the industry commenters agreed that the RA should be held responsible when an IROL is exceeded for a time greater than <math>T_v</math>. If the RA’s directives are not followed, the entities involved are subject to sanctions under this standard’s Requirement 208 – RA Directives.</p> <p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p>	
<p><u>NPCC CP9</u>  Michael Schiavone National Grid USA #1  Roger Champagne Hydro-Quebec TransEnergie #1  Ralph Rufrano New York Power Authority #1  David Little Nova Scotia Power Inc. #1  David Kiguel Hydro One Networks #1  Michael Potishnak ISO-New England #2  Barry Gee National Grid USA #1  Dan Stosick ISO-New England #2  Fernando Saavedra ISO-New England #2  Greg Campoli New York ISO #2</p>	<p>NPCC also suggests adding “footnote 1” that appears on page 10 to the Level one non-compliance measure to capture the thought that no overt action is sometimes an acceptable action</p>
<p>The footnote was added to the heading for the levels of non-compliance.</p>	

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<p>Susan Morris SERC #2          Bill Reinke SERC #2          Sam Stryker Fayettevill PWC #3, 4, 5          Carter Edge SEPA #4, 5          Bill Thompson Dominion Trans #1</p> <p><u>SERC Operations Planning Subcommittee</u>          Carter Edge SEPA #4, 5          William Gaither So Carolina Pub Serv Auth #1          Mike Miller Southern Co #1          Roger Brand Muni Elec Auth GA #1          Phil Creech Progress Energy – CP&amp;L #1          Gene Delk So Carolina Elec &amp; Gas #1          Al McMeekin So Carolina Elec &amp; Gas #1          Greg Ott Alcoa-Yadkin #1          Doug Newbaue GA System Operations #1          Mike Clements TVA #1          Don Reichenbach Duke Energy #1          Lynna Estep SERC #2          Mark Creech TVA #1</p>	<ol style="list-style-type: none"> <li>1. We have a general concern that the Reliability Authority is the only function held responsible for instances where the IROL is exceeded. Currently, not all RAs have operating responsibility over their systems. Some functions are delegated. With this in mind, the levels of non-compliance would pertain only to RAs, while they may not have direct control. For instance, the operating entities could choose not to follow the RA’s direction. It seems that there should be a complementary standard that would penalize operating entities for not adhering to the direction of the RA. The penalties should be ranked according to the severity of the situation. In other words, the entities that actually have the operating responsibility must be held accountable.</li> <li>2. Has the Interconnection Reliability Operating Limit Violation Report been developed yet? Is this the existing NERC Operating Policy 5, Appendix 5F as modified with the results of the Reliability Coordinator IRLV Field Test? Will this report become part of this standard?</li> <li>3. Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</li> <li>4. In section 2, the measures do not capture the requirement to PREVENT instances where IROLs may be exceeded. The following re-wording is suggested. Section 4, below is also slightly modified to align with change in the measurement.</li> </ol> <p style="color: red;">The reliability authority shall document each instance where actions are taken to prevent exceeding or to mitigate the magnitude and duration of interconnection reliability operating limit:</p> <p>The reliability authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity’s energy management system, or may be from some other source.)</p> <p>2.2. The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than or equal to Tv:</p> <p>2.2.1. The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five</p>
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	<p>business days of the initiation of the event. (The report includes the date and time of the event, identification of which interconnection reliability operating limit was violated and the Tv for that limit, magnitude and duration of exceeding the interconnection reliability operating limit, actions taken or directives issued, and explanation of results of actions or directives.)</p> <p>The reliability authority shall have the following available upon the request of its compliance monitor:          Operations logs or other documentation in accordance with Measure 2.1 indicating the magnitude and duration of each interconnection reliability operating limit event and the actions or directives issued for each of these instances</p> <p>4.3.2. Interconnection Reliability Operating Limit Violation Reports completed in accordance with Measure 2.2</p>
<ol style="list-style-type: none"> <li>1. Requirement 208 of this standard requires that the entities supporting the RA follow the RA's directives. If those entities fail to follow the RA's directives, they would be sanctioned under Requirement 208, so if an IROL is exceeded for a time greater than that IROL's T<sub>v</sub>, the RA is not necessarily the only entity that would be subject to sanctions. It is also envisioned that the RA will have contractual relationships with BAs and others to perform as instructed.</li> <li>2. The IROL Violation Report is a compliance document and has been developed for the Compliance Monitors. The report will be appended to the end of this document so that everyone can see the report. The report was not made part of this standard because in the future there may be automated systems that could be used to simplify the reporting process, and we didn't want to have to update this standard just to accommodate that improvement. The IROL Violation Report does not ask for any data that isn't identified in the standard. The IROL Violation Report is not an exact duplication of the report currently found in Appendix 5F, and is not an exact duplication of the report currently being field tested by the OLDTF. The report in Appendix 5F and the report being field tested by the OLDT both ask for more data than is needed by the Compliance Monitor, and is outside the scope of this standard.</li> <li>3. The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures –and in many cases this is not true.</li> <li>4. The recommended change to measure 2.1 would require a great deal of data collection and was not adopted. System Operators are continually working to prevent instances of exceeding IROLs.</li> </ol>	
<p>FRCC Op, Eng &amp; Mkt Int          Linda Campbell FRCC #2          Paul Elwing Lakeland Electric # 3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4</p>	<ol style="list-style-type: none"> <li>1. Both requirement 1.2 and measure 2.2 are about reporting IROL violations when the time is greater than or equal to Tv. We do not agree with the equal to portion of this. To us, Tv is analogous to a speed limit. You would not report if you were equal, but only if in excess. We do not understand the reasoning for equal to being included.</li> <li>2. We do not agree with the levels of non-compliance because level 4 is based on an</li> </ol>

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<p>Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>	<p>IROL being exceeded for a time greater or equal to Tv. This does not agree with the measures listed. The measures are to document actions taken or report violations that occurred. The levels of non-compliance should be based on what we are measuring. Please see our earlier comments on Section 6 - sanctions.</p> <p>3. This requirement in particular brought a question to mind about what the RA really is. Does this requirement assume the RA is the Reliability Coordinator of today who looks at "the big picture", or does it mean today's control area operator? It is still unclear to us what the RA really is. Is there a hole in the functional model that needs to be filled? We do not think we are the only participants in the industry still confused, so work needs to be done to clarify exactly who or what the RA is.</p>
<p>1. Your suggestion for revising the T<sub>v</sub> so this was a limit you could meet but not exceed was adopted and is reflected in the revised definition for Tv as well as in the language in this requirement.</p> <p>2. Measures are an indication that the compliance managers can use to determine if the requirement's performance has been met. The Compliance Managers do not have access to the real-time data that would indicate instances of approaching or exceeding IROLs. The documentation and reports are the physical evidence the compliance managers need to assess compliance with the requirement. The requirement clearly indicates that the RA shall act or direct others to act to prevent or mitigate instances of exceeding IROLs.</p> <p>3. The work that needs to be done in clarifying the Functional Model needs to be done by the Functional Model Review Task Group and is outside the scope of the SDT.</p>	
<p>Alan Boesch NPPD #1</p>	<p>The level four non-compliance does not match the measure. The measure only requires a report and does not hold the RA responsible for exceeding the operating limit.</p>
<p>Measures are an indication that the compliance managers can use to determine if the requirement's performance has been met. The Compliance Managers do not have access to the real-time data that would indicate instances of approaching or exceeding IROLs. The documentation and reports are the physical evidence the compliance managers need to assess compliance with the requirement. The requirement clearly indicates that the RA shall act or direct others to act to prevent or mitigate instances of exceeding IROLs.</p>	
<p>Carter Edge SEPA #4, 5</p>	<p>Has the Interconnection Reliability Operating Limit Violation Report been developed yet? Is this the existing NERC Operating Policy 5, Appendix 5F as modified with the results of the Reliability Coordinator IRLV Field Test?</p> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</p> <p>4.3. The reliability authority shall have the following available upon the request of its compliance monitor:</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

	<p>Operations logs or other documentation <b>in accordance with Measure 2.1</b> indicating the magnitude and duration of each instance of exceeding an interconnection reliability operating limit and the actions or directives issued for each of these instances</p> <p>Interconnection Reliability Operating Limit Violation Reports <b>completed in accordance with Measure 2.2</b></p> <p>Level four: non-compliance is not supported by either the Measures or the Compliance Monitoring Process. We understand there is a desire by some in the industry to hold the Reliability Authority accountable for Interconnection Reliability Operating Limit Violations, however, as written, this standard does not support it. Section 5.4 should be rewritten to read:</p> <p>5.4. Level four: Interconnection reliability operating limit exceeded for time greater than or equal to Tv minutes and either: no documentation to indicate actions taken or directives issued to mitigate the instance, or no Interconnection Reliability Operating Limit Violation Report completed and filed with its compliance monitor</p>
<p>The IROL Violation Report is a compliance document and has been developed for the Compliance Monitors. The report will be appended to the end of this document so that everyone can see the report. The report was not made part of this standard because in the future there may be automated systems that could be used to simplify the reporting process, and we didn't want to have to update this standard just to accommodate that improvement. The IROL Violation Report does not ask for any data that isn't identified in the standard. The IROL Violation Report is not an exact duplication of the report currently found in Appendix 5F, and is not an exact duplication of the report currently being field tested by the OLDTF. The report in Appendix 5F and the report being field tested by the OLDTF both ask for more data than is needed by the Compliance Monitor, and is outside the scope of this standard.</p>	
<p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p>	
<p>Measures are an indication that the compliance managers can use to determine if the requirement's performance has been met. The Compliance Managers do not have access to the real-time data that would indicate instances of approaching or exceeding IROLs. The documentation and reports are the physical evidence the compliance managers need to assess compliance with the requirement. The requirement clearly indicates that the RA shall act or direct others to act to prevent or mitigate instances of exceeding IROLs.</p>	
<p>Dan Boezio &amp; Raj Rana AEP #1, 3, 5, 6</p>	<p>1. Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc</p>
<p><b>The suggestion that defined terms be capitalized has been adopted and is reflected in the revised standard.</b></p>	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

<p><u>Operating Reliability Working Group SPP</u>  Gerry Burrows KCP&amp;L #1  Bob Cochran SPS #1  Peter Kuebeck OG&amp;E #1  Scott Moore AEP #1  Tom Stuchlik Westar #1  Dan Boezio AEP #1  Matt Bordelon CLECO #1  Mike Crouch WFEC #1  Mike Gammon KCP&amp;L #1  Kevin Goolsby SPP #2  Bo Jones Westar #1  Allen Klassen Westar #1  Thad Ness AEP #1  Harold Wyble KCP&amp;L #1  Robert Rhodes SPP #2</p>	<p>The performance reset period should be changed to 12 months rather than one calendar year.  Non-compliance items should match the standard's definitions. Section 5.1 should be referred to as a Documentable Interconnection Reliability Operating Limit Violation. Section 5.2 should be referred to as an Interconnection Reliability Operating Limit Violation or a Reportable Interconnection Operating Limit Violation, whichever is correct (see response to Question 1).</p>
<p>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation"</p> <p>The terms, Documentable IROL and Reportable IROL were not used in the last draft of this standard, and several commenters indicated it should be dropped. The terminology used in the levels of non-compliance matches the terminology used in the standard, so this suggestion was not adopted.</p>	
<p><u>MAAP Ops Subcommittee #2</u>  Llyod Linke MAPP  Allan Silk Manitoba Hydro  Paul Brune NPPD  Tod Gosnell Omaha Public Pwr Dist  Paul Koskela Minnesota Pwr  Larry Larson Otter Tail Power  Derrick Moe WAPA  Dick Pursley Great River Energy  Martin Trencé Xcel Energy  Joseph Knight MAPPCOR</p>	<p>The Measure 2.1.1 should include the explicit provision that this log is a publicly available document. The actions so logged by the RA should be independent and consistent, and the log is one way of enhancing visibility to assure this is the case.</p>
<p>There is no reliability-related reason to make this a public document, and this change was not adopted.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions**

<p><u>BPA Adm TBL #1</u>          James Murphy      Mike Viles          James Randall      Al Johnson          Jeff Newby          Jim Gronquist          Sylvia Wiggerhaus   Brian Tuck          Dick Spence        Tracy Rolstad          Steve Hitchens</p>	<p>5.4 Remove minutes, TV may be seconds and TV is already a time period by definition.</p>
<p><b>Agreed. The revised standard reflects this change.</b></p>	
<p>Kathleen Goodman ISO-NE #2</p>	<p>ISO-NE also suggests adding “footnote 1” that appears on page 10 to the Level one non-compliance measure to capture the thought that no overt action is sometimes an acceptable action.</p> <p>ISO New England does not believe that we should identify specific limits which must be reported on. Rather, we advocate internally reporting on every violation which does not clear within 30 minutes (as defined in NERC policy). Subsequently, each reported violation will be studied/examined to see if it would have caused instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk power transmission system (have an Inter-Area impact outside of the New England Area following next contingency). If so, ISO New England would report this "OSL violation" to NPCC and NERC within 72 hours. If there would not have been an Inter-Area impact (i.e. the impact would have been localized within the offending Control Area's boundary), no external reporting will occur. We suggest this approach be adopted.</p> <p>By restricting reporting to pre-identified limits, NERC may not be getting the information they seek through this Standard. Only through a post-operational assessment, can a true analysis (with the correct system configuration) be performed and an adequate judgement be made on the potential impact to the bulk power system.</p> <p>We also believe that data should not be archived unless the limit is not cleared within 30 minutes. We do not advocate archiving data for every limit violation if it cleared in less than 30 minutes.</p>

## Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 204 - Actions

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The footnote was added to the heading for the levels of non-compliance.

This standard is based on the assumption that while all system operating limits are important, a subset of limits is most critical to the reliability of the interconnection, and exceeding these limits could lead to voltage instability, cascading outages, or uncontrolled separation. By identifying these limits in advance, system operators can pay extra attention to these limits, and can be better prepared to take (or direct) actions to prevent and mitigate instances of exceeding these limits. Some of these limits really shouldn't be exceeded for 30 minutes – and that is one of the reasons why the industry supported modifying the language that is in current Operating Policy, and allowing each RA to establish a  $T_v$  that is most appropriate to each limit.

The decision on whether or not to report an instance of exceeding an IROL is based on the length of time the IROL was exceeded. Lists of IROLs are not expected to remain static – these must be updated to conform with changes to the system.

When an IROL is exceeded, the documentation required is that which is typically found on the system operations log, and shouldn't require any additional effort to develop. Many entities keep operations logs for an indefinite period of time – and this standard requires keeping the data for just 3 years to ensure that there is some data on site when the Compliance Monitor conducts a scheduled audit once every 3 years.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

**Requirement 205 - Data Specification - Do you agree with the requirement?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Alan Boesch NPPD #1	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
Charles Yeung Reliant #5		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Ed Davis Entergy Services #1		x	
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5		x	
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

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<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

**Requirement 205 - Data Specification - Do you agree with the measures?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Alan Boesch NPPD #1	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Steve Hitchens			
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Terry Bilke Midwest ISO #2		x	
Charles Yeung Reliant #5		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Ed Davis Entergy Services #1		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
<u>Operating Reliability Working Group SPP</u>		x	
Gerry Burrows KCP&L #1			
Bob Cochran SPS #1			
Peter Kuebeck OG&E #1			
Scott Moore AEP #1			
Tom Stuchlik Westar #1			
Dan Boezio AEP #1			
Matt Bordelon CLECO #1			
Mike Crouch WFEC #1			
Mike Gammon KCP&L #1			
Kevin Goolsby SPP #2			
Bo Jones Westar #1			
Allen Klassen Westar #1			
Thad Ness AEP #1			
Harold Wyble KCP&L #1			
Robert Rhodes SPP #2			

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

**Requirement 205 - Data Specification - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Sylvia Wiggerhaus Dick Spence Steve Hitchens	Brian Tuck Tracy Rolstad			
Darrell Richardson	Illinois Power #1, 3	x		
David Thorne	Pepco #1	x		
Albert DiCaprio	MAAC #2	x		
Alan Johnson	Mirant Americas Energy Mktg #6	x		
Mark Heimbach	PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun		x		
<u>Trans Subcommittee</u> Robert E. Reed Daniel Cooper Ken Donohoo Michael Gildea Francis Halpin Tom Mallinger Darrick Moe Scott Moore Bill Slater Tom Stuchlik Joseph Styslinger David Thorne Robert Waldele Roman Carter John Ahr Susan Morris Ed Pfeiffer Ray Palmieri Tom Vandervort	PJM Michigan Public Power Agency ERCOT Duke-Energy, North America Bonneville Power Administration Midwest ISO Western Area Power Adm American Electric Power Florida Power Corporation Western Resources Southern Company D. H. Thorne Consultants, Inc New York ISO Southern Company Alleghany Power Systems SERC Ameren ECAR NERC	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6          Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	<p>x</p>		
<p><u>Compliance Subcommittee</u></p>			<p>Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion.          Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor.          Re-number 4.2 and 4.3 to 4.3 and 4.4</p>
<p>The suggested language changes were not adopted for the following reasons:</p> <ul style="list-style-type: none"> <li>- "Information submittal" is an undefined term. Industry commenters have asked that the compliance elements be as specific as possible so that there won't be huge variations from region to region in the application of the compliance monitoring. If an 'information submittal' is the same as a self-certification document, then this is already covered in the original language. Including language that gives each compliance monitor the flexibility to assess this requirement however it chooses, does not conform with the industry's requests for standardization in the compliance monitoring process.</li> </ul> <p>The only significant change between the original language and the proposed new section 4.2 is the addition of the concept that the compliance monitor has the freedom to either conduct an audit per a schedule, or just show up unscheduled. Again, this does not support the industry's request for increased standardization in the compliance monitoring process. The original language included the option of conducting an 'investigation upon compliant' and this seems more appropriate than unscheduled audits.</p>			
<p>Stuart Goza TVA #1</p>		<p>x</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<p><u>Operating Reliability Working Group SPP</u>  Gerry Burrows KCP&amp;L #1  Bob Cochran SPS #1  Peter Kuebeck OG&amp;E #1  Scott Moore AEP #1  Tom Stuchlik Westar #1  Dan Boezio AEP #1  Matt Bordelon CLECO #1  Mike Crouch WFEC #1  Mike Gammon KCP&amp;L #1  Kevin Goolsby SPP #2  Bo Jones Westar #1  Allen Klassen Westar #1  Thad Ness AEP #1  Harold Wyble KCP&amp;L #1  Robert Rhodes SPP #2</p>		x	
<p>Charles Yeung Reliant #5</p>		x	
<p>Susan Morris SERC #2  Bill Reinke SERC #2  Sam Stryker Fayettevill PWC #3, 4, 5  Carter Edge SEPA #4, 5  Bill Thompson Dominion Trans #1</p>		x	
<p>Ed Davis Entergy Services #1</p>		x	
<p><u>SERC Operations Planning Subcommittee</u>  Carter Edge SEPA #4, 5  William Gaither So Carolina Pub Serv Auth #1  Mike Miller Southern Co #1  Roger Brand Muni Elec Auth GA #1  Phil Creech Progress Energy – CP&amp;L #1  Gene Delk So Carolina Elec &amp; Gas #1  Al McMeekin So Carolina Elec &amp; Gas #1  Greg Ott Alcoa-Yadkin #1  Doug Newbaue GA System Operations #1  Mike Clements TVA #1</p>		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard  
Requirement 205 – Data Specification**

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Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

**Requirement 205 - Data Specification - Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
Southern Co Transmission Planning Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencle Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Charles Yeung Reliant #5		x	
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

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<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
Ed Davis Entergy Services #1		x	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

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**Requirement 205 - Data Specification –Other comments**

**Summary Consideration:**

The BA and LSE were added to the list of functions the RA may send a data specification because the entities performing these functions may have data the RA needs to support real-time monitoring, operational planning analyses and real-time assessments conducted relative to operating within its reliability area’s IROLs.

Additional language was added to clarify that the RA shall report incidents of not receiving data as specified if the RA has been unable to resolve the issue. This should provide entities an opportunity to resolve issues without involving sanctions.

The compliance monitoring process was modified to change the performance reset period to ‘12 months from the last violation’

The SDT was unable to accommodate the changes recommending that the Transmission Owner and Transmission Operator be added to this requirement. The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being addressed in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Operator is responsible for local network integrity, not the reliability of the bulk transmission system and does not need the data for this standard.

Commenter	Comments
Ken Githens Allegheny Energy Supply #5	<p><i>However, refer to comment under question 37.</i></p> <p>(RA data collection and communication is required under Std. 200 and 600 with financial sanction for noncompliance under both. An organization should not be hit with financial sanctions under both standards for not communicating the data. Only one standard should apply.)</p>
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard does require that equipment owners provide facility ratings data to the RA for the development of System Operating Limits. If the same data is needed by the RA for both standards, then it is up to the compliance manager to determine the appropriate sanction. We sent a suggestion to the Director, Compliance, recommending that the Compliance Enforcement Program develop a formal way of addressing situations such as this, but preventing this from happening is beyond the scope of the SDT.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<p>Terry Bilke Midwest ISO #2</p>	<p>Why does the RA have to notify the Compliance Monitor within 5 days if an entity doesn't provide data to the RA if 'data provision' is monitored via annual self-certification?</p> <p>The standard requires the RA to be responsible for collecting data from all participants in a 'mutually agreeable' format. This seems to be saying that each generator owner, BA, TP can ask for a different format. If the RA doesn't agree to this, the RA becomes non-compliant because it is failing to collect data.</p> <p>The RA should have the authority to require consistent data formats from each participant group (the participant group as a whole should have a say in the data format, not each individual participant).</p>
<p>By requesting that the RA notify the Compliance Monitor if data is not provided, the RA is providing the Compliance Monitor with the justification for conducting an 'investigation upon complaint'. The Compliance Monitor would then conduct an 'investigation upon complaint' (under Requirement 206). If the RA doesn't notify the Compliance Monitor and let the Compliance Monitor know that data isn't being provided, then the Compliance Monitor doesn't have justification to conduct an investigation to determine why the data isn't being provided. Note that this requirement was modified to give the RA an opportunity to resolve the issue first, and only notify the Compliance Monitor when the RA is unable to resolve the issue of not being provided the data as specified.</p> <p>Requiring consistent data formats for each participant group seems outside the scope of this standard, but there is nothing to preclude an RA from attempting to use this technique to reach consensus on agreeable formats.</p>	
<p>Stuart Goza TVA #1</p>	<p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</p> <p>Section 4.3 should be rewritten to read:</p> <p style="padding-left: 40px;">4.3. The reliability authority shall have the following available upon the request of the compliance monitor:</p> <p style="padding-left: 80px;">4.3.1. Data specification(s) in accordance with Measure 2.1</p> <p style="padding-left: 80px;">4.3.2. Proof of distribution of the data specification(s) in accordance with Measure 2.2</p>
<p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p>	
<p>Southern Co Transmission Planning #1</p>	<p>The Transmission Operator should also be included in this requirement for "the areas</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<p>Todd Lucas Southern Co          Joe Payne Mississippi Power Company          Travis Koval Southern Co          Bill Pope Gulf Power Company          John Clark Southern Co          David Johnson Savannah Electric          Mike Miller Southern Co          Jim Griffith Southern Co          Monroe Landrum Southern Co</p>	<p>for which they are responsible".</p>
<p>The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being addressed in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Operator is responsible for local network integrity, not the reliability of the bulk transmission system and does not need the data for this standard.</p>	
<p>Charles Yeung Reliant #5</p>	<p>The data obtained through this reliability requirement have significant commercial significance. NERC must ensure that the entities who receive such information have their employees maintain confidentiality of the data from market participants including their affiliated generators, transmission providers, load serving entities, marketers or other relevant market participants. Although a confidentiality agreement or confidentiality requirement is not a specific reliability need, NERC must be cognizant of and sympathetic to these commercial concerns in its reliability requirements. The confidentiality agreement itself may be developed and administered through some other standard setting organization.</p>
<p>The requirement limits the data to that which is needed for real time monitoring and for analyses and assessments relative to IROLs. This standard does not address sharing of data collected by the RA.          The RA Certification SAR includes the following requirements:</p> <ul style="list-style-type: none"> <li>- Documentation identifying that the organization has signed the NERC Confidentiality Agreement.</li> <li>- Documentation identifying that the Reliability Authority personnel are aware of their obligations and responsibilities under the NERC Confidentiality Agreement.</li> <li>- Documentation identifying the code of conduct for personnel performing the Reliability Authority responsibilities.</li> <li>- Documentation identifying that the Reliability Authority personnel are aware of their obligations and responsibilities under the code of conduct.</li> </ul>	
<p>FRCC Op. Eng &amp; Mkt Int          Linda Campbell FRCC #2          Paul Elwing Lakeland Electric # 3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4</p>	<p>Is requirement 1.1.3 really meant to be RA's other than themselves? Again, confusion about who/what the RA really is. Depending on who/what is the RA, we may have concern over what data is being requested. There needs to be a reliability justification for the data requested. What happens if there is a disagreement over what data should be supplied? In regards to the levels of non-compliance, why only levels 1 and 2 in this requirement and level 4 in all the others? Does this imply that this standard is not as</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<p>Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1</p>	<p>important?</p>
<p>RA's monitor parts of other RA's systems and will need to collect and share data with one another. The reliability authority is defined in the functional model.</p> <p>The reliability justification for the data being specified is addressed in the requirement. The data is limited to that which is needed for real-time monitoring, operational planning analyses and real-time assessments relative to IROLs.</p> <p>Regions do have a dispute resolution process, and so does NERC. This can be used by any entity to clarify such matters, and doesn't need to be specifically addressed in each standard.</p> <p>Exceeding an IROL for time greater than the IROL's <math>T_v</math> does seem to be a more important measure than having a complete data specification.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

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<p>Dan Boezio &amp; Raj Rana AEP #1, 3, 5, 6</p>	<ol style="list-style-type: none"><li>1. Defined terms should be capitalized, such as “Reliability Authority”, “Operational Planning Analyses”, “Interconnected Reliability Operating Limits”, etc</li><li>2. This section should only deal with the data specification. The data collection portion should either be its own section or be combined with section 206 at a minimum. Items 1.3 and 2.3 of this section should be a part of that new section or merged into section 206.</li><li>3. The standard as it is written assumes that 100 percent of the data that is required for real-time monitoring, operational planning analyses and real-time assessments can be collected 100 percent of the time. The availability of real-time data is subject to many controllable and uncontrollable factors of both the Reliability Authority and the entity providing the data.</li><li>4. The Reliability Authority and the entity providing the data should have documented protocols for the acceptable level of data quality and availability specific to the data type, need, and other factors. This information is outside the scope of this standard, but this standard should ensure that the documentation does exist and the requirements established in the protocols are enforced. This will enable the requirement of the entity to provide the data sufficient for the Reliability Authority to perform its functions and require the Reliability Authority to report any non-compliance without the ambiguity of what is an acceptable failure or not.</li><li>5. What is the dispute resolution process for disagreements with requirements established by the Reliability Authority? Can the entity say they cannot provide the data requested and justify why not to some group or entity? We suggest that there should be a provision that the data requested by the RA is reasonable and needed and that the NERC Regional Reliability Councils will be the arbiter for disputes.</li><li>6. We continue to maintain that there needs to be an industry minimum specification for the type of data required, similar to Appendix 4B “Electric System Security Data.”</li><li>7. There should be a requirement that the data specification, including scan rates, data transmission rates, and data quality, is mutually agreed upon between the RA and their data supplier.</li></ol>
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

1. The suggested change, that defined terms be capitalized, has been adopted and is reflected in the revised standard.
2. There is nothing in the standards development process that requires the type of separation of requirements suggested. During the initial posting of this Standard, the industry indicated a preference for grouping related requirements, and the SDT has tried to meet this directive.
3. The data specification needs to address actions to provide data when automated data collection systems are not operational. There should not be a sanction if this process is followed to provide the RA with data upon the loss of an automated system.
4. Including data quality protocols goes beyond the scope of the standard.
5. Regions do have a dispute resolution process, and so does NERC. This can be used by any entity to clarify such matters, and doesn't need to be specifically addressed in each standard.
6. The industry as a whole is not in favor of a 'minimum' set of data. Any RA is free to copy the contents of Appendix 4B and include this as part of its data specification. Appendix 4B, by itself, would not meet all of the measures in this requirement.
7. The standard does require that data be provided in a 'mutually agreed upon format'. This was intended to protect the interests of the RA and the entities that must provide the RA with data. The data specification is not limited to the elements that are listed in the standard. The RA may add more elements to the data specification, but these additional elements will not be reviewed for compliance.

Operating Reliability Working Group SPP  
 Gerry Burrows KCP&L #1  
 Bob Cochran SPS #1  
 Peter Kuebeck OG&E #1  
 Scott Moore AEP #1  
 Tom Stuchlik Westar #1  
 Dan Boezio AEP #1  
 Matt Bordelon CLECO #1  
 Mike Crouch WFECC #1  
 Mike Gammon KCP&L #1  
 Kevin Goolsby SPP #2  
 Bo Jones Westar #1  
 Allen Klassen Westar #1  
 Thad Ness AEP #1  
 Harold Wyble KCP&L #1  
 Robert Rhodes SPP #2

Requirements 1.1, 1.2 and 1.3 are too open-ended on the part of the reliability authority. Justification should be required for all requested data to prevent unreasonable and burdensome requests on the part of the reliability authority. The data requested and the timing of the delivery of the data should be mutually agreeable to the reliability authority and the responding entity.

The SDT should define a minimum, default set of data, such as that spelled out in Appendix 4B, and provide that as a guide for what type of data may be requested.

Requirement 1.3 appears to be repeated again as a measure in Measure 2.3. Shouldn't Requirement 1.3 be moved to Standard 206 since it deals with provision of the data? In fact, there is a great deal of material in 205 that is related data provision. Shouldn't all of this be moved to 206? Perhaps additional clarification between 205 and 206 is all that is needed.

The performance reset period should be changed to 12 months rather than one calendar year.

## Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification

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1. Adding a justification requirement seems to be overly burdensome. If an entity wants to challenge the need for data and can't resolve the issue with its RA, then that entity can use the dispute resolution process.
2. The industry as a whole is not in favor of a 'minimum' set of data. Any RA is free to copy the contents of Appendix 4B and include this as part of its data specification. Appendix 4B, by itself, would not meet all of the measures in this requirement.
3. There are many different ways of sorting the various requirements in this standard. Industry comments on the first version of the standard indicated a preference for putting related requirements together. If requirement 1.3 were moved to 206, this might increase confusion. In requirement 206, one RA has to provide data to another RA, and it may be confusing as to which RA had to notify the Compliance Monitor when data wasn't provided as specified.
4. There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<p>Ed Davis Entergy Services #1  <u>SERC Operations Planning Subcommittee</u>  Carter Edge SEPA #4, 5  William Gaither So Carolina Pub Serv Auth #1  Mike Miller Southern Co #1  Roger Brand Muni Elec Auth GA #1  Phil Creech Progress Energy – CP&amp;L #1  Gene Delk So Carolina Elec &amp; Gas #1  Al McMeekin So Carolina Elec &amp; Gas #1  Greg Ott Alcoa-Yadkin #1  Doug Newbaue GA System Operations #1  Mike Clements TVA #1  Don Reichenbach Duke Energy #1  Lynna Estep SERC #2  Mark Creech TVA #1</p> <p>Susan Morris SERC #2  Bill Reinke SERC #2  Sam Stryker Fayettevill PWC #3, 4, 5  Carter Edge SEPA #4, 5  Bill Thompson Dominion Trans #1</p>	<ol style="list-style-type: none"> <li>1. Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term “reliability authority” in all of this section 205 be replaced with “reliability authority and transmission owner”.</li> <li>2. The requirement for data collection should be tied to its impact on reliability. Requirement 1.3 should be modified to read: <ol style="list-style-type: none"> <li>1.3. The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority does not provide data as specified <b>and this lack of data has an impact on reliability.</b></li> </ol> <p>Measurement 2.3.1 should be rewritten to read:</p> <p>2.3.1. The notification shall take place within five business days of discovering that the data <b>having an impact on reliability</b> is missing.</p> </li> <li>3. In order to prevent a shotgun approach to data collection we propose Section 2.1.1 be modified to read: <ol style="list-style-type: none"> <li>2.1.1. Specification shall include a list of <b>minimum</b> required data, a mutually agreeable format, and timeframe and periodicity for providing data.</li> </ol> </li> <li>4. Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. <p>Section 4.3 should be rewritten to read:</p> <p>4.3. The reliability authority shall have the following available upon the request of the compliance monitor:  Data specification(s) <b>in accordance with Measure 2.1</b></p> <p>4.3.2. Proof of distribution of the data specification(s) <b>in accordance with Measure 2.2</b></p> </li> </ol>
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<ol style="list-style-type: none"> <li>1. The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being addressed in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Owner is not responsible for the same activities – so addressing the Transmission Owner’s data collection needs is outside the scope of this standard.</li> <li>2. The suggested change would link data collection with an instance of exceeding an IROL, and that could result in a multiple sanctions for the same violation. The standards are being drafted so that there will only be a single sanction for a single violation.</li> <li>3. The suggestion that the term, ‘minimum’ be added was not adopted since this is a subjective term and leaves room for arguments as to what minimum means.</li> <li>4. The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures –and in many cases this is not true.</li> </ol>	
<p>Alan Johnson Mirant Americas Energy Mktg #6</p>	<p>A little concerned that the entities required to provide data not have to submit the same data to multiple authorities. For example, some of the data that the RA will want from a generator operator for its models, should be the same data required by the PA for its models. The generator operator should only have to submit this data one time (to some central data collecting point), to be utilized by all functions that have a need for it. This should make the data collection processes more efficient for all and decrease the possibility of data errors.</p>
<p>Because of the way we are developing these new reliability standards, data collection is addressed in several standards. It did not seem possible to identify all the data that needs to be collected and distributed to all functions for all standards in advance of those standards being developed and approved. This standard is limited to collecting and providing data relative to monitoring, analyzing and assessing the bulk system relative to IROLs.</p>	
<p><u>Trans Subcommittee</u>          Robert E. Reed PJM          Daniel Cooper Michigan Public Power Agency          Ken Donohoo ERCOT          Michael Gildea Duke-Energy, North America          Francis Halpin Bonneville Power Administration          Tom Mallinger Midwest ISO          Darrick Moe Western Area Power Adm          Scott Moore American Electric Power</p>	<ol style="list-style-type: none"> <li>1) Requirement 205, 1.1, The TS recommends enhancing the last sentence to read “This includes specifying and collecting data from entities such as:”</li> <li>2) The TS recommends adding “1.1.6. Planning Authority.”</li> <li>3) The TS recommends enhancing 1.3. to read “The reliability authority shall notify its compliance monitor when an entity does not provide data as specified.”</li> </ol>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 205 – Data Specification**

<p>Bill Slater Florida Power Corporation          Tom Stuchlik Western Resources          Joseph Styslinger Southern Company          David Thorne D. H. Thorne Consultants, Inc          Robert Waldele New York ISO          Roman Carter Southern Company          John Ahr Alleghany Power Systems          Susan Morris SERC          Ed Pfeiffer Ameren          Ray Palmieri ECAR          Tom Vandervort NERC</p>	
<ol style="list-style-type: none"> <li>1. The suggested change was not made because these standards need to clarify what functions must comply with the requirements. The recommended change would have made this more ambiguous.</li> <li>2. The planning authority is a recipient of data, and is not expected to have the type of data the RA needs to run analyses, assessments and for monitoring.</li> <li>3. The suggested change was not made because this requirement was modified to provide an opportunity for the RA to work out the problem before notifying the compliance monitor.</li> </ol>	
<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6          Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	<p>Transmission Operator should be added along with the Reliability Authority for section 205 1.1.1</p>
<p>The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being addressed in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Operator is not responsible for the same activities – so addressing the Transmission Operator's data collection needs is outside the scope of this standard.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

**Requirement 206 - Data Provision - Do you agree with the requirement?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFECC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Martin Trencce Xcel Energy Joseph Knight MAPPCOR			
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x	x	
Ed Davis Entergy Services #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

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<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

**Requirement 206 - Data Provision - Do you agree with the measures?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFECC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u>	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3			
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u>	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun			
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Stysliger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Alan Boesch NPPD #1		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR		x	
Ed Davis Entergy Services #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

**Requirement 206 - Data Provision - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
<u>Compliance Subcommittee</u>			OK
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Raymond Mammarella PPL Elec Util #1	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Tony Jankowski We Energies #4		x	4.2 Should not be a rolling time frame.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

<p>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.</p>			
Tom Pruitt Duke Power #1		x	
Alan Boesch NPPD #1		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power		x	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencé Xcel Energy Joseph Knight MAPPCOR			
Stuart Goza TVA #1		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

**Requirement 206 - Data Provision - Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric #3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Terry Bilke Midwest ISO #2		x	
Alan Boesch NPPD #1		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
Kathleen Goodman ISO-NE #2		x	
<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2			
<u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
Stuart Goza TVA #1		x	
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

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David Kiguel	Hydro One Networks	#1			
Michael Potishnak	ISO-New England	#2			
Barry Gee	National Grid USA	#1			
Dan Stosick	ISO-New England	#2			
Fernando Saavedra	ISO-New England	#2			
Greg Campoli	New York ISO	#2			
Alan Johnson	Mirant Americas Energy Mktg	#6		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

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**Requirement 206 - Data Provision –Other comments**

**Summary Consideration:** While there were many comments recommending specific changes, most commenters indicated support of the requirement, its measures and compliance elements. The following changes were made to further improve the level of consensus on this requirement:

- The BA and LSE were added to the list of functions that must comply with this requirement – this change was made to conform with the changes made to requirement 205.
- A sentence was added to the requirement to clarify that the data to be provided under this requirement is limited to data needed by the RA to support real-time monitoring, operational planning analyses and real-time assessments conducted relative to operating within its reliability area’s IROLs.
- The compliance monitoring process was modified to change the performance reset period to ‘12 months from the last violation’.
- The compliance monitoring process was also modified to broaden the scope of evidence that could be used to demonstrate compliance. As many commenters indicated, a cover letter is not sent with real-time data and it isn’t reasonable to request this. The standard was revised as follows: Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. Copies of transmittal cover letters indicating data was sent to the reliability authority.

The SDT was unable to accommodate the changes recommending that the TOP and TOW be added to the list of recipients for data. The data being provided in this requirement is data needed to monitor, analyze and assess the system with respect to IROLs – and this activity is assigned to the RA, not the TOP or the TOW.

The recommendation that additional levels of non-compliance be added was not adopted. Most industry commenters favored the levels of non-compliance as proposed, and the result of having data supplied, but not in the agreed upon format, having data supplied late, and having incomplete data is all the same – the RA doesn’t have the data it needs to support monitoring, analyses and assessments relative to IROLs for its reliability area. The level four non-compliance was adjusted to add language to indicate that there is only a level four if data was not provided as specified and the RA was unable to resolve the issue. This should preclude any sanctions for omissions that can be resolved between the entities involved.

Commenter	Comments
Terry Bilke Midwest ISO #2	<p>This section appears to have an “all or nothing” format. The RA needs a great deal of information to fulfill its obligations. The “level 4” violation should only be for failure to provide data on IROL elements. There should perhaps be some scaled compliance level for failure to provide other data, such as:</p> <p>Level 1: failure to provide 10% of the RA’s required data or data transmission failures greater than X% of the year.</p> <p>Level 2: failure to provide 10% of the RA’s required data or data transmission failures greater than X% of the year.</p> <p>Level 3: failure to provide 10% of the RA’s required data or data transmission failures greater than X% of the year</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

	Level 4: failure to provide data for any IROL or pre-contingent condition.
<p>The standard has been revised to clarify that the only data addressed by this requirement is data the RA needs to monitor, analyze and assess the system with respect to IROLs.</p>	
<p>The level four non-compliance was adjusted to add language to indicate that there is only a level four if data was not provided as specified and the RA was unable to resolve the issue. This should preclude any sanctions for omissions that can be resolved between the entities involved.</p>	
Ken Githens Allegheny Energy Supply #5	<p>However, refer to comment under question 37.</p> <p>(RA data collection and communication is required under Std. 200 and 600 with financial sanction for noncompliance under both. An organization should not be hit with financial sanctions under both standards for not communicating the data. Only one standard should apply.)</p>
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard does require that equipment owners provide facility ratings data to the RA for the development of System Operating Limits. If the same data is needed by the RA for both standards, then it is up to the compliance manager to determine the appropriate sanction. We sent a letter to the Director, Compliance, suggesting that the Compliance Enforcement Program develop a formal way of addressing situations such as this, but preventing this from happening is beyond the scope of the SDT.</p>	
Stuart Goza TVA #1	<p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.</p> <p>Section 4.3.1 is too specific for the measure it supports. A possible solution might be:</p> <p>4.3.1. Documentation indicating data was sent to the reliability authority in accordance with Measure 2.1</p> <p>Non-compliance in data submission could take several forms and levels of impact to reliability. Section 5 should be modified as follows:</p> <p>5. Levels of Non-compliance:</p> <p>5.1. Level one: Data was provided, but not in the mutually agreed format</p> <p>5.2. Level two: Data was provided, but not within the time-frame specified</p> <p>5.3. Level three: Incomplete data was provided</p> <p>5.4. Level four: Data was not provided to the reliability authority as specified.</p>



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.

The result of having data supplied, but not in the agreed upon format, having data supplied late, and having incomplete data is all the same – the RA doesn't have the data it needs to support monitoring, analyses and assessments relative to IROLs for its reliability area. The level four non-compliance was adjusted to add language to indicate that there is only a level four if data was not provided as specified and the RA was unable to resolve the issue. This should preclude any sanctions for omissions that can be resolved between the entities involved.

Kathleen Goodman ISO-NE #2  
NPCC CP9  
 Michael Schiavone National Grid USA #1  
 Roger Champagne Hydro-Quebec TransEnergie #1  
 Ralph Rufrano New York Power Authority #1  
 David Little Nova Scotia Power Inc. #1  
 David Kiguel Hydro One Networks #1  
 Michael Potishnak ISO-New England #2  
 Barry Gee National Grid USA #1  
 Dan Stosick ISO-New England #2  
 Fernando Saavedra ISO-New England #2  
 Greg Campoli New York ISO #2

Regarding the level of non-compliance for not providing data to the reliability authority, NPCC (ISO-NE) feels that there should be some differentiation between not submitting any data and submitting partial data or new/additional data and perhaps there needs to be some more granularity in the description of what constitutes non-compliance.

The result of having data supplied, but not in the agreed upon format, having data supplied late, and having incomplete data is all the same – the RA doesn't have the data it needs to support monitoring, analyses and assessments relative to IROLs for its reliability area. The level four non-compliance was adjusted to add language to indicate that there is only a level four if data was not provided as specified and the RA was unable to resolve the issue. This should preclude any sanctions for omissions that can be resolved between the entities involved.

Southern Co Transmission Planning #1  
 Todd Lucas Southern Co  
 Joe Payne Mississippi Power Company  
 Travis Koval Southern Co  
 Bill Pope Gulf Power Company  
 John Clark Southern Co  
 David Johnson Savannah Electric  
 Mike Miller Southern Co  
 Jim Griffith Southern Co  
 Monroe Landrum Southern Co

The Transmission Operator should also be included in this requirement for "the areas for which they are responsible".

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being provided in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Operator is responsible for local network integrity, not the reliability of the bulk transmission system and does not need to receive the data identified in this requirement.

Susan Morris SERC #2  
 Bill Reinke SERC #2  
 Sam Stryker Fayettevill PWC #3, 4, 5  
 Carter Edge SEPA #4, 5  
 Bill Thompson Dominion Trans #1

1. Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term “reliability authority” in all of this section 206 be replaced with “reliability authority and transmission owner(s)”.
2. Add planning authority(ies) to the list of functions in section 1.1.1 that have a reliability relationship and shall provide data (particularly results of dynamic analysis) to the reliability authority and transmission owner(s).
3. Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.
4. Section 4.3.1 is too specific for the measure it supports. A possible solution might be:  
  
Documentation indicating data was sent to the reliability authority in accordance with Measure 2.1
5. Non-compliance in data submission could take several forms and levels of impact to reliability. Section 5 should be modified as follows:  
  
5. Levels of Non-compliance:
  - 5.1. Level one: Data was provided, but not in the mutually agreed format
  - 5.2. Level two: Data was provided, but not within the time-frame specified
  - 5.3. Level three: Incomplete data was provided
  - 5.4. Level four: Data was not provided to the reliability authority as specified.

## Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision

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1. The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being provided in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Owner is not responsible for the reliability of the bulk transmission system and does not need to receive this data identified in this requirement.
2. The latest version of the draft changes to the Functional Model did not address the suggested addition, so it was not added.
3. The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures –and in many cases this is not true.
4. Agreed. The suggestion made improves upon the original language, but doesn't address evidence that real time data has been sent. Section 4.3.1 was changed as follows. Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. ~~Copies of transmittal cover letters indicating data was sent to the reliability authority.~~
5. The result of having data supplied, but not in the agreed upon format, having data supplied late, and having incomplete data is all the same – the RA doesn't have the data it needs to support monitoring, analyses and assessments relative to IROLs for its reliability area.

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

<p>Alan Boesch NPPD #1</p>	<p>Step 4.3.1 is not necessarily going to be required. Real time data will not have a cover letter. I would suggest that it should be re-worded to say: "Provide evidence that data was sent to the reliability authority."          The measure and level of non-compliance does not address failure to provide data because of broken equipment. If an entity temporarily fails to provide real time data because of a failure of a RTU would it be considered a level four non-compliance?</p>
<p>The compliance monitoring section of the standard was revised to reflect your suggestions: Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. Copies of transmittal cover letters indicating data was sent to the reliability authority.</p> <p>The data specification issued by the RA under requirement 205 must identify how real time data will be supplied when there are telecommunication failures. As long as the data is supplied as specified, there is no sanction. (205.2.1.2 Specification shall address the data provision process to use when automated real-time system operating data is unavailable.)</p>	
<p>Dan Boezio &amp; Raj Rana AEP #1, 3, 5, 6</p>	<ol style="list-style-type: none"> <li>1. Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc</li> <li>2. The compliance sections of Requirements 205 and 206 are not complimentary. If the RA doesn't have a data specification for an entities data, even if the RA really needs and should have that data, the maximum level of non-compliance for the RA is a level two. However, if an entity does not provide the data as specified, that entity is level 4 non-compliant, even if the data requested is not critical. Depending on how the RA writes his specification, an entity could be in violation of Requirement 206 if only a few pieces of individual data are missing, regardless of the criticality of that data.</li> <li>3. Need to refer to non-compliance of meeting the data quality and availability protocols (see comments for section 205) established by the Reliability Authority.</li> <li>4. Additionally, Section 205 1.3 and 2.3 should either be placed in a new section regarding data collection by the Reliability Authority or they should be contained within this section.</li> <li>5. 206.4.3.1: "Copies of transmittal cover letters indicating data was sent to the reliability authority." This is too vague. A lot of the data covered by this requirement is real-time or near real-time data that is sent via an ICCP connection. Is the required transmittal letter the letter that initially set up the link between the two parties? As worded one could even take the position that the entity responsible is required to send a transmittal cover letter every time they send data via the ICCP link. The SDT should rewrite this requirement to better reflect their desired intent.</li> <li>6. An example to consider: A RA has in his data specification the requirement that a certain piece or pieces of data be provided to the RA every 5 seconds. However,</li> </ol>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

	<p>the entity with the data has systems in place that only report/refresh the desired data on an exception basis, such as breaker status is provided only when the breaker changes states. Per requirement 206, the data providing entity would be level 4 non-compliant. However, the RA would have the data they need in order to perform their required assessments and monitor the system. So why would the data providing entity still be able to be found non-compliant? This also goes to the heart of the issue of the RA having to justify the reasonableness of his data specification before a data providing entity would be required to spend significant dollars in order to meet the RA's arbitrary specification.</p>
<ol style="list-style-type: none"> <li>1. The suggestion that defined terms be capitalized has been adopted and is reflected in the revised standard.</li> <li>2. Both requirements 205 and 206 were modified to add a provision that if the RA is able to resolve the issue of not receiving the data it needs, then the RA does not need to notify its compliance monitor. There is only a level four non-compliance for requirement 206 if the entity does not provide the data as specified AND the entity is unable to resolve the discrepancy with its RA.</li> <li>3. Addressing data quality and protocols is outside the scope of this standard.</li> <li>4. Most industry commenters requested that related requirements be grouped together.</li> <li>5. The standard was revised as follows: Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. Copies of transmittal cover letters indicating data was sent to the reliability authority.</li> <li>6. The SDT tried to accommodate most industry commenters by balancing the needs of the RA against the needs of other functions. Under the Functional Model, the RA has been assigned a great deal of responsibility. Other functions must work cooperatively with the RA so the RA has the information needed, when needed, to make reasonable decisions to protect the interconnected transmission system. The standard includes language to indicate that the data must be provided in a 'mutually agreed upon format'. This language was included to try and address the RA's needs as well as the needs of the rest of the industry. Requiring that every element of the data specification be, 'mutually agreeable' seemed unwieldy, and requiring the RA to justify every element of its data specification also seems unwieldy.</li> </ol>	
<p>Tom Pruitt Duke Power #1</p>	<p>For consistency with previous sections, replace the first sentence in section 206.4.2 with "The performance-reset period shall be one calendar year."</p>
<p>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

<p><u>Operating Reliability Working Group SPP</u>          Gerry Burrows KCP&amp;L #1          Bob Cochran SPS #1          Peter Kuebeck OG&amp;E #1          Scott Moore AEP #1          Tom Stuchlik Westar #1          Dan Boezio AEP #1          Matt Bordelon CLECO #1          Mike Crouch WFEC #1          Mike Gammon KCP&amp;L #1          Kevin Goolsby SPP #2          Bo Jones Westar #1          Allen Klassen Westar #1          Thad Ness AEP #1          Harold Wyble KCP&amp;L #1          Robert Rhodes SPP #2</p>	<ol style="list-style-type: none"> <li>1. The cover letter requirement in 4.3.1 is confusing and needs clarification. While such a letter can provide evidence that data has been sent, such a requirement could also prove to be excessive and impractical. Infrequent data transmittals such as impedance changes, ratings, etc, could easily be transmitted under cover letter. However, does this requirement also apply to each bit of real-time data transmitted via ICCP?</li> <li>2. Only one data point out of potentially thousands of points could cause non-compliance as specified in Section 5. This implies that nothing less than 100% of the data, 100% of the time is sufficient. Is this the intent of the SDT? Is a transducer failure in a remote substation as damaging to reliability of the interconnection as the loss of an entire ICCP link between a responding entity and its reliability authority? Is a failure for one scan cycle as critical as that point not being available for days or weeks? It would appear that non-compliance associated with this standard needs revisiting.</li> <li>3. There appears to be inconsistency between non-compliance in 205 and 206. If a reliability authority makes an unreasonable data request in 205 and doesn't get the requested data within the specified timeframe, then the reliability authority is only penalized at a level one. But if a responding entity loses one data point for one four-second data scan, that responding entity is blasted with a level four penalty. There does not appear to be equity here.</li> </ol>
<ol style="list-style-type: none"> <li>1. Several commenters agreed with your comment about 4.3.1. The standard was revised as follows: Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. <del>Copies of transmittal cover letters indicating data was sent to the reliability authority.</del></li> <li>2. The data specification issued by the RA under requirement 205 must identify how real time data will be supplied when there are telecommunication failures. As long as the data is supplied as specified, there is no sanction. (205.2.1.2 Specification shall address the data provision process to use when automated real-time system operating data is unavailable.)</li> <li>3. If an entity feels that the data specified by the RA is unreasonable, then that entity can try to resolve the issue with its RA or through the dispute resolution process. Both requirements 205 and 206 were modified to add a provision that if the RA is able to resolve the issue of not receiving the data it needs, then the RA does not need to notify its compliance monitor. There is only a level four non-compliance for requirement 206 if the entity does not provide the data as specified AND the entity is unable to resolve the discrepancy with its RA.</li> </ol>	
<p><u>MAAP Ops Subcommittee #2</u>          Llyod Linke MAPP          Allan Silk Manitoba Hydro          Paul Brune NPPD          Tod Gosnell Omaha Public Pwr Dist          Paul Koskela Minnesota Pwr</p>	<p>Provisions should be made to excuse the temporary loss of real-time data due to technical difficulties, such as telecommunications interruptions.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

<p>Larry Larson Otter Tail Power  Derrick Moe WAPA  Dick Pursley Great River Energy  Martin Trencé Xcel Energy  Joseph Knight MAPPCOR</p>	
<p>Agreed. The data specification issued by the RA under requirement 205 must identify how real time data will be supplied when there are telecommunication failures. As long as the data is supplied as specified, there is no sanction. (205.2.1.2 Specification shall address the data provision process to use when automated real-time system operating data is unavailable.) In addition, both requirements 205 and 206 were modified to add a provision that if the RA is able to resolve the issue of not receiving the data it needs, then the RA does not need to notify its compliance monitor. There is only a level four non-compliance for requirement 206 if the entity does not provide the data as specified AND the entity is unable to resolve the discrepancy with its RA.</p>	
<p>Ed Davis Entergy Services #1</p>	<p>Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO and RA. Therefore, we suggest that every occurrence of the term “reliability authority” in all of this section 206 be replaced with “reliability authority and transmission owner”.</p>
<p>The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being provided in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Owner is not responsible for the reliability of the bulk transmission system and does not need to receive this data identified in this requirement.</p>	
<p><u>SERC Operations Planning Subcommittee</u>  Carter Edge SEPA #4, 5  William Gaither So Carolina Pub Serv Auth #1  Mike Miller Southern Co #1  Roger Brand Muni Elec Auth GA #1  Phil Creech Progress Energy – CP&amp;L #1  Gene Delk So Carolina Elec &amp; Gas #1  Al McMeekin So Carolina Elec &amp; Gas #1  Greg Ott Alcoa-Yadkin #1  Doug Newbaue GA System Operations #1  Mike Clements TVA #1  Don Reichenbach Duke Energy #1</p>	<p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures.  Section 4.3.1 is too specific for the measure it supports. A possible solution might be:  <b>Documentation</b> indicating data was sent to the reliability authority <b>in accordance with Measure 2.1</b></p> <p>Non-compliance in data submission could take several forms and levels of impact to reliability. Section 5 should be modified as follows:  5. Levels of Non-compliance:  5.1. Level one: <b>Data was provided, but not in the mutually agreed format</b>  5.2. Level two: <b>Data was provided, but not within the time-frame specified</b></p>

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<p>Lynna Estep SERC #2 Mark Creech TVA #1</p>	<p>5.3. Level three: <b>Incomplete data was provided</b> 5.4. Level four: Data <b>was</b> not provided to the reliability authority as specified.</p>
<p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p> <p>The result of having data supplied, but not in the agreed upon format, having data supplied late, and having incomplete data is all the same – the RA doesn't have the data it needs to support monitoring, analyses and assessments relative to IROLs for its reliability area. Both requirements 205 and 206 were modified to add a provision that if the RA is able to resolve the issue of not receiving the data it needs, then the RA does not need to notify its compliance monitor. There is only a level four non-compliance for requirement 206 if the entity does not provide the data as specified AND the entity is unable to resolve the discrepancy with its RA.</p>	
<p>Alan Johnson Mirant Americas Energy Mktg #6</p>	<p>In the requirements and measures section, would like to see language added that will be more specific as to where entities can obtain RA specifications for data provision. For example, section 1.1 could be modified to read as follows: “ Each entity performing one of the following functions shall provide data, as specified <i>in the RA's business practice manual</i>, to the reliability authority(ies) with which is has a reliability relationship.”</p> <p>Regarding the compliance monitoring process, section 4.3.1 may be inconsistent since the method of transmitting data is not specified.</p>
<p>Each RA may develop its own data specification – so including a title for RA's data specification documents is beyond the scope of this standard. The standard was drafted to give RAs flexibility – some RA's may have a data specification in a single document, while other RAs may have multiple data specifications.</p> <p>Section 4.3.1 was modified as follows. “The standard was revised as follows: Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. <del>Copies of transmittal cover letters indicating data was sent to the reliability authority.</del>”</p>	
<p><u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun</p>	<p>We believe the reliability of the real-time bulk transmission system is a coordinated effort between the Reliability Authority and Transmission Operator and the data should be provided to both functions.</p>



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 206 – Data Provision**

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<p>The Functional Model assigns responsibility for monitoring operating reliability limits and for conducting operating reliability analyses to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The data being provided in this requirement is data needed to support real time monitoring and operational planning analyses and real-time assessments relative to IROLs. The Transmission Operator is not responsible for the reliability of the bulk transmission system and does not need to receive all of the same data identified in this requirement. The TOP does need some of this data to monitor local network integrity, but requiring that data be provided to the TOPs is beyond the scope of this standard.</p>	
<p>Kathleen Goodman ISO-NE #2</p>	<p>Under the Section 4.3.1 “Copies of transmittal cover letters...” may not be an appropriate measure for instances of notification of missing data. For example, most of the data required is transmitted electronically from field equipment, through ICCP/SCADA, and into the EMS. Where would such “cover letters” fall in this process?</p>
<p>The compliance monitoring process was modified to broaden the scope of evidence that could be used to demonstrate compliance. As many commenters indicated, a cover letter is not sent with real-time data and it isn’t reasonable to request this. The standard was revised as follows: Evidence indicating data was sent to the reliability authority or evidence that the entity responsible committed to providing the data on the specification. <del>Copies of transmittal cover letters indicating data was sent to the reliability authority.</del></p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

**Requirement 207 - Action Plan - Do you agree with the requirement?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Dick Spence Tracy Rolstad Steve Hitchens			
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x	x	
Ed Davis Entergy Services #1		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

**Requirement 207 - Action Plan - Do you agree with the measures?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		

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<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEW #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Dick Spence Tracy Rolstad Steve Hitchens			
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
Stuart Goza TVA #1		x	
Ed Davis Entergy Services #1		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Kathleen Goodman ISO-NE #2		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

**Requirement 207 - Action Plan - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Dick Spence Tracy Rolstad Steve Hitchens			
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
Ed Davis Entergy Services #1	x		
<u>Compliance Subcommittee</u>			Change 4.1 to: The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by information submittal to the compliance monitor, either on or off site at the compliance monitors discretion. Add new 4.2 Subsequent to the initial compliance review, compliance will be re-verified at least every three years using a scheduled on-site review method or un-scheduled (investigation) method, review of information submitted as requested, or through self-certification, at the discretion of the compliance monitor. Re-number 4.2 and 4.3 to 4.3 and 4.4
The suggested language changes were not adopted for the following reasons.			
<ul style="list-style-type: none"> <li>- "Information submittal" is an undefined term. Industry commenters have asked that the compliance elements be as specific as possible so that there won't be huge variations from region to region in the application of the compliance monitoring. If an 'information submittal' is the same as a self-certification document, then this is already covered in the original language. Including language that gives each compliance monitor the flexibility to assess this requirement however it chooses, does not conform with the industry's requests for standardization in the compliance monitoring process.</li> <li>- The only significant change between the original language and the proposed new section 4.2 is the addition of the concept that the compliance monitor has the freedom to either conduct an audit per a schedule, or just show up unscheduled. Again, this does not support the industry's request for increased standardization in the compliance monitoring process. The original language included the option of conducting an 'investigation upon compliant' and this seems more appropriate than unscheduled audits.</li> </ul>			
Stuart Goza TVA #1		x	
Tom Pruitt Duke Power #1		x	
<u>SERC Operations Planning Subcommittee</u>		x	
Carter Edge SEPA #4, 5			

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

<p>William Gaither So Carolina Pub Serv Auth #1          Mike Miller Southern Co #1          Roger Brand Muni Elec Auth GA #1          Phil Creech Progress Energy – CP&amp;L #1          Gene Delk So Carolina Elec &amp; Gas #1          Al McMeekin So Carolina Elec &amp; Gas #1          Greg Ott Alcoa-Yadkin #1          Doug Newbaue GA System Operations #1          Mike Clements TVA #1          Don Reichenbach Duke Energy #1          Lynna Estep SERC #2          Mark Creech TVA #1</p>			
<p>Susan Morris SERC #2          Bill Reinke SERC #2          Sam Stryker Fayettevill PWC #3, 4, 5          Carter Edge SEPA #4, 5          Bill Thompson Dominion Trans #1</p>		x	
<p><u>FRCC Op, Eng &amp; Mkt Int</u>          Linda Campbell FRCC #2          Paul Elwing Lakeland Electric # 3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>		x	



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

**Requirement 207 - Action Plan - Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Alan Boesch NPPD #1	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trencce Xcel Energy Joseph Knight MAPPCOR	x		
John Horakh MAAC #2	x		
BPA Adm TBL #1 James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Dick Spence Tracy Rolstad Steve Hitchens			
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Stuart Goza TVA #1		x	
<u>SERC Operations Planning Subcommittee</u>		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

<p>Carter Edge SEPA #4, 5          William Gaither So Carolina Pub Serv Auth #1          Mike Miller Southern Co #1          Roger Brand Muni Elec Auth GA #1          Phil Creech Progress Energy – CP&amp;L #1          Gene Delk So Carolina Elec &amp; Gas #1          Al McMeekin So Carolina Elec &amp; Gas #1          Greg Ott Alcoa-Yadkin #1          Doug Newbaue GA System Operations #1          Mike Clements TVA #1          Don Reichenbach Duke Energy #1          Lynna Estep SERC #2          Mark Creech TVA #1</p>			
<p>FRCC Op, Eng &amp; Mkt Int          Linda Campbell FRCC #2          Paul Elwing Lakeland Electric # 3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>		<p>x</p>	
<p>Kathleen Goodman ISO-NE #2</p>		<p>x</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

**Requirement 207 - Action Plan – Other comments?**

**Summary Consideration:** While there were many comments recommending specific changes, most commenters indicated support of the requirement, its measures and compliance elements. The following changes were made:

- Measure 2.1 was modified to indicate that the Action Plan must 'identify' as well as be coordinated with entities that take actions and with entities that are affected by such actions.

The Performance Reset period was modified to include the following language: "12 months from the last violation"

Suggestions to change the format of the compliance so that it cross referenced measures (e.g., ". . .as described in measure 2.1") and were not adopted. When the standards are entered into a relational database and reports are generated, cross-references will be difficult to understand.

The SDT was unable to accommodate the changes recommending that Transmission Owner and Transmission Operator be added to the list of functions that must develop Action Plans. The Functional Model assigns responsibility for reliability of the transmission system to the Reliability Authority, and these new standards are being developed to support the delineation of responsibility outlined in the Functional Model.

Commenter	Comments
Terry Bilke Midwest ISO #2	How do you demonstrate coordination of an action plan?
<p>The compliance manager could contact the entities listed in the plan and ask them if they were invited to participate in the development of the plan.</p>	
<p>Stuart Goza TVA #1</p> <p><u>SERC Operations Planning Subcommittee</u></p> <p>Carter Edge SEPA #4, 5</p> <p>William Gaither So Carolina Pub Serv Auth #1</p> <p>Mike Miller Southern Co #1</p> <p>Roger Brand Muni Elec Auth GA #1</p> <p>Phil Creech Progress Energy – CP&amp;L #1</p> <p>Gene Delk So Carolina Elec &amp; Gas #1</p> <p>Al McMeekin So Carolina Elec &amp; Gas #1</p> <p>Greg Ott Alcoa-Yadkin #1</p> <p>Doug Newbaue GA System Operations #1</p> <p>Mike Clements TVA #1</p> <p>Don Reichenbach Duke Energy #1</p> <p>Lynna Estep SERC #2</p> <p>Mark Creech TVA #1</p>	<p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. The Levels of non-compliance should be objectively determined based on the evidence.</p> <p>Measure 2.1 should be modified to include:</p> <p style="padding-left: 40px;">2.1. The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall <b>identify and</b> be coordinated with those entities responsible for acting and with those entities impacted by such actions.</p> <p>Section 4.3 should be modified to include:</p> <p style="padding-left: 40px;">4.3. The reliability authority shall make the following available for inspection by the compliance monitor upon request:</p> <p style="padding-left: 80px;">4.3.1 Action plan <b>developed in accordance with Measure 2.1</b></p> <p>Section 5 should be modified to include:</p> <p style="padding-left: 40px;">5. Levels of Non-compliance</p> <p style="padding-left: 80px;">5.1. Level one: Action plan exists but wasn't coordinated with all involved</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

<p>Susan Morris SERC #2          Bill Reinke SERC #2          Sam Stryker Fayettevill PWC #3, 4, 5          Carter Edge SEPA #4, 5          Bill Thompson Dominion Trans #1</p>	<p>and impacted entities</p> <p>5.2. Level two: Action plan exists but wasn't coordinated with any involved or any impacted entities</p> <p>5.3. Level three: <b>Action plan is incomplete</b></p> <p>5.4. Level four: No action plan</p>
<p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p> <p>The suggestion to add, 'and identify' was adopted and is reflected in the revised standard.          The suggestion to add, "action plan incomplete" for a level three non-compliance was not added because this would be difficult to objectively measure.</p>	
<p>NPCC CP9          Michael Schiavone National Grid USA #1          Roger Champagne Hydro-Quebec TransEnergie #1          Ralph Rufrano New York Power Authority #1          David Little Nova Scotia Power Inc. #1          David Kiguel Hydro One Networks #1          Michael Potishnak ISO-New England #2          Barry Gee National Grid USA #1          Dan Stosick ISO-New England #2          Fernando Saavedra ISO-New England #2          Greg Campoli New York ISO #2</p>	<p>NPCC suggests that there be timeframe requirement added instead of "upon request" to providing the Action plan and suggests 20 business days.</p>
<p>If the plan exists, there should not be a need to have 20 business days to show the plan. This suggestion was not adopted since it could have the affect of encouraging non-compliant performance.</p>	
<p>Charles Yeung Reliant #5</p>	<p>The requirement is silent on whether the Action Plan must comply with any tariff or market requirements. As written, it is allowable for an RA to submit a "command and control" schedule reduction or load-shedding procedure as its Action Plan to meet this Requirement. Reliant understands that NERC believes such Action Plans have significant commercial consequences and should be developed by other standard setting organizations. However, without the RA and control area operators' agreement that such Action Plans are effective, the industry effort to develop such plans will be slow and cumbersome. Reliant recommends that this SDT coordinate with the appropriate standards setting organization(s) to ensure the Action Plans are effective. Further, this Requirement should include a requirement that these Action Plans are the</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

	primary means of mitigating Reliability Operating Limit violations and not a “command and control” or “Emergency” procedure.
<p>NERC’s reliability standards are being developed to support reliability and making specific references to tariffs and market issues is outside the scope of these new standards. However, the standards are being developed in a manner that should protect the markets. This standard includes the following specific language that was intended to ensure that entities impacted by an Action Plan would have an opportunity to participate in the development of the plan: “The plan shall identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions. “</p> <p>Action Plans are intended to be unique to each RA, not generic to the industry. The SDT does not have a role in developing the individual RA’s Action Plans, and therefore the SDT has no role in coordinating the development of these action plans with other standards-setting organizations.</p> <p>Language in the standard specifically states that if an existing ‘emergency procedure’ addresses the prevention and mitigation of IROLs, then that procedure could be used to meet this requirement. The intent is to ensure that RAs are not forced to revise existing documents that already address this requirement.</p>	
<p>Susan Morris SERC #2          Bill Reinke SERC #2          Sam Stryker Fayettevill PWC #3, 4, 5          Carter Edge SEPA #4, 5          Bill Thompson Dominion Trans #1          Ed Davis Entergy Services #1</p>	<p>Please see the comment to question (2), above, concerning the TOs responsibility and role with respect to this standard. If the developers of the standard insist on only one functional entity being responsible for this activity, then that functional entity should be the Transmission Owner. However, we view this activity as a shared activity between the TO(s) and RA. Therefore, we suggest that every occurrence of the term “reliability authority” in all of this section 207 be replaced with “reliability authority and transmission owner(s)”.</p>
<p>The Functional Model assigns responsibility for reliability of the bulk transmission system to the Reliability Authority and these new standards must be written in a manner that supports the delineation of responsibility outlined in the Functional Model. The Transmission Owner is not responsible for the reliability of the bulk transmission system.</p>	
<p><u>FRCC Op, Eng &amp; Mkt Int</u>          Linda Campbell FRCC #2          Paul Elwing Lakeland Electric #3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1</p>	<p>We are not convinced that this requirement is needed. The requirements in 204 (Actions) seem to already cover this area. There could be many actions to take to prevent or mitigate instances of exceeding IROLs, so it could be extremely burdensome to document every conceivable action. Truly the proof is in the 204 requirement so we would suggest deleting this one.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1	
Most industry commenters supported the inclusion of this requirement, so it was not dropped from the standard.	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	Defined terms should be capitalized, such as “Reliability Authority”, “Operational Planning Analyses”, “Interconnected Reliability Operating Limits”, etc
The suggestion that defined terms be capitalized has been adopted and is reflected in the revised standard.	
Tom Pruitt Duke Power #1	For consistency with previous sections, replace the first sentence in section 207.4.2 with “The performance-reset period shall be one calendar year.”
There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: “12 months from the last violation” This change supports your recommendation.	
Alan Johnson Mirant Americas Energy Mktg #6	Suggest adding a requirement that the RA notify those entities impacted by the action plan, of their responsibilities within the action plan. This will enable them to incorporate the required actions into their own operating plans.
The standard requires that those impacted be involved in the development of the plan. The requirement includes the following language intended to ensure that those impacted would have some involvement in the development of the Action Plan. “The plan shall identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions.”	
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	We believe that for an action plan to mitigate events it must be coordinated between involved parties, i.e. Reliability Authorities and Transmission Operators.
The standard includes language to support this: “The plan shall identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions.” If the TOP is responsible for taking actions, then the TOP is required to be involved in the development of the plan.	
Kathleen Goodman ISO-NE #2	ISO-NE again suggests that provisions be made for mitigating actions which were not previously identified by study, but cleared the limit violation. If these provisions are not included, it may restrict the actions that may be taken and, ultimately, adversely impact reliability (i.e. there may be actions that can be taken in real-time, given an existing network configuration which was not envisioned at the time the operational analysis was done; however, if NERC Standards mandate that an action plan be followed, these



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 207 – Action Plan**

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	<p>actions may not be taken or seriously considered).</p> <p>All data retention requirements of three years should be modified to a 12-month rolling retention.</p>
<p>This requirement states, “The reliability authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its interconnection reliability operating limits.” The intent is to ensure that the RA’s system operators have a plan to follow in advance of being faced with an IROL event. Note that, for the reasons you’ve stated, this standard does not require that the RA’s system operators follow the Action Plan. The drafting team feels that any action taken, whether part of a plan or not, or any deliberate decision to take no action, meets the standard. The decision to not take any action must show up in the documentation.</p> <p>This standard requires keeping the data for just 3 years to ensure that there is some data on site when the Compliance Monitor conducts a scheduled audit once every 3 years.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

**Requirement 208 – Reliability Authority Directives - Do you agree with the requirement?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric #3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Albert DiCaprio MAAC #2	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Ed Davis Entergy Services #1		x	
Charles Yeung Reliant #5		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	
Alan Boesch NPPD #1		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
Michael Sidiropoulos Pacificorp		x	
Alan Johnson Mirant Americas Energy Mktg #6		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

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<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

**Requirement 208 – Reliability Authority Directives - Do you agree with the measures?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric #3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1 Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
<u>SERC Operations Planning Subcommittee</u>	x		



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC			
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Terry Bilke Midwest ISO #2		x	
Alan Boesch NPPD #1		x	
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	
Charles Yeung Reliant #5		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

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<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2		x	
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

**Requirement 208 – Reliability Authority Directives - Do you agree with the compliance monitoring process?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
<u>Compliance Subcommittee</u>			OK
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Michael Sidiropoulos Pacificorp	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&L #1 Bob Cochran SPS #1 Peter Kuebeck OG&E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&L #1 Robert Rhodes SPP #2	x		
Robert Grover PPL Elec Util #3	x		
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun			
<u>Trans Subcommittee</u> Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5	x		
Alan Boesch NPPD #1		x	
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
Charles Yeung Reliant #5		x	
Stuart Goza TVA #1		x	
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

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<p><u>FRCC Op, Eng &amp; Mkt Int</u>  Linda Campbell FRCC #2  Paul Elwing Lakeland Electric # 3  John Shaffer FPL #1  Bob Remley Clay Elec Coop #4  Patti Metro FRCC #2  Eirc Grant Progress Energy – FL #1  Joe Roos Ocala Electric Utility #3  Joe Krupar FL Muni Pwr Agency #3  Richard Gilbert Lakeland Electric #3  Bill Slater Progress Energy – FL #1  Amy Long Lakeland Electric #1  Roger Westphal Gainesville Regional Util #5  Bob Goss SEPA #5  Steve Wallace Seminore Electric Coop #4  Ted Hobson JEA #1</p>		<p>x</p>	
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**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

**Requirement 208 – Reliability Authority Directives - Do you agree with the levels of non-compliance?**

Commenter	Yes	No	Comments
Kathleen Goodman ISO-NE #2	x		
Terry Bilke Midwest ISO #2	x		
Ken Githens Allegheny Energy Supply #5	x		
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co Monroe Landrum Southern Co	x		
Peter Burke ATC #1	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Michael Sidiropoulos Pacificorp	x		
Robert Grover PPL Elec Util #3	x		
<u>Southern Co Transmission Planning</u> Todd Lucas Southern Co #1	x		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

Joe Payne Mississippi Pwr Co #3 Travis Koval Southern Co #1 Bill Pope Gulf Pwr Co #3 John Clark Southern Co #1 David Johnson Savannah Electric #3			
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
Ed Davis Entergy Services #1	x		
Albert DiCaprio MAAC #2	x		
Mark Heimbach PPL Generation #6	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x		
Tony Jankowski We Energies #4		x	Should have a documentation level of noncompliance similar to sec. 204, 5.1
<b>Agreed. The standard was revised to reflect this change.</b>			
Stuart Goza TVA #1		x	
Alan Boesch NPPD #1		x	
Tom Pruitt Duke Power #1		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<p><u>Operating Reliability Working Group SPP</u>  Gerry Burrows KCP&amp;L #1  Bob Cochran SPS #1  Peter Kuebeck OG&amp;E #1  Scott Moore AEP #1  Tom Stuchlik Westar #1  Dan Boezio AEP #1  Matt Bordelon CLECO #1  Mike Crouch WFEC #1  Mike Gammon KCP&amp;L #1  Kevin Goolsby SPP #2  Bo Jones Westar #1  Allen Klassen Westar #1  Thad Ness AEP #1  Harold Wyble KCP&amp;L #1  Robert Rhodes SPP #2</p>		x	
<p>Charles Yeung Reliant #5</p>		x	
<p>Susan Morris SERC #2  Bill Reinke SERC #2  Sam Stryker Fayettevill PWC #3, 4, 5  Carter Edge SEPA #4, 5  Bill Thompson Dominion Trans #1</p>		x	
<p><u>FRCC Op, Eng &amp; Mkt Int</u>  Linda Campbell FRCC #2  Paul Elwing Lakeland Electric # 3  John Shaffer FPL #1  Bob Remley Clay Elec Coop #4  Patti Metro FRCC #2  Eirc Grant Progress Energy – FL #1  Joe Roos Ocala Electric Utility #3  Joe Krupar FL Muni Pwr Agency #3  Richard Gilbert Lakeland Electric #3  Bill Slater Progress Energy – FL #1  Amy Long Lakeland Electric #1</p>		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1			
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1		x	
Alan Johnson Mirant Americas Energy Mktg #6		x	
<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5		x	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

**Requirement 208 – Reliability Authority Directives - Other comments**

**Summary Consideration:** While there were many comments recommending specific changes, most commenters indicated support of the requirement, its measures and compliance elements.

- A level one non-compliance was added for instances where an entity followed the RA’s directives but did not document this.
- The performance reset period was modified so that it is consistent throughout this standard. The revised performance reset period , “12 months from the last violation”.

Suggestions to change the format of the compliance so that it cross referenced measures (e.g., “. . .as described in measure 2.1”) and were not adopted. When the standards are entered into a relational database and reports are generated, cross-references will be difficult to understand.

The Generator Operator was not added to the list of functions that must comply with RA directives because under the Functional Model, the RA directs the BA and the BA directs the Generators.

Commenter	Comments
Terry Bilke Midwest ISO #2	The “measures” section only say that the various authorities only have to document the directive and the actions they took (not that they actually followed the directive).
Both the requirement and the measure clearly stated that the entity responsible “. . . shall follow the reliability authority’s directives. . . “	
Stuart Goza TVA #1	<p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Non-compliance could take several forms and levels of impact to reliability. The Levels of non-compliance should be objectively determined based on the evidence.</p> <p>Section 4.3.1 should be modified to read:</p> <p style="margin-left: 40px;">4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:</p> <p style="margin-left: 80px;">4.3.1.1. Date and time of each of directive received</p> <p style="margin-left: 80px;">4.3.1.2. Directive issued</p> <p style="margin-left: 80px;">4.3.1.3. Actions taken in response to directive <b>in accordance with Measure 2.1</b></p> <p>Section 5 should be modified as follows:</p> <p>5. Levels of Non-compliance</p> <p style="margin-left: 20px;">5.1 Level one: <b>Operations log or other data source(s) do not show one of the following:</b></p> <p style="margin-left: 40px;"><b>5.1.1 Date and time of each of directive received</b></p> <p style="margin-left: 40px;"><b>5.1.2 Directive issued</b></p> <p style="margin-left: 40px;"><b>5.1.3 Actions taken in response to directive</b></p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

	<p>5.2 Level two: Operations log or other data source(s) do not show any of the following:</p> <p>5.1.4 Date and time of each of directive received</p> <p>5.1.5 Directive issued</p> <p>5.1.6 Actions taken in response to directive</p> <p>5.3 Level three: Not applicable.</p> <p>5.4 Level four: Did not follow directives.</p>
<p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p> <p>Other commenters also suggested additional levels of non-compliance. A level one was added to address situations where the directives were followed, but weren't documented.</p>	
<p>Kathleen Goodman ISO-NE #2  <u>NPCC CP9</u>  Michael Schiavone National Grid USA #1  Roger Champagne Hydro-Quebec TransEnergie #1  Ralph Rufrano New York Power Authority #1  David Little Nova Scotia Power Inc. #1  David Kiguel Hydro One Networks #1  Michael Potishnak ISO-New England #2  Barry Gee National Grid USA #1  Dan Stosick ISO-New England #2  Fernando Saavedra ISO-New England #2  Greg Campoli New York ISO #2</p>	<p>Although we agree with the level four instance of non-compliance it would be beneficial for the compliance monitor to require data and other information surrounding the inaction.</p>
<p>If there were inaction, the RA would most likely notify the compliance monitor, and the compliance monitor would conduct a triggered investigation. During the triggered investigation, the compliance monitor may ask for additional details to determine the reason for not following the RA's directives.</p>	
<p>Peter Burke ATC #1</p>	<p>Opinion within ATC was divided over requirement 208. One side could agree with the requirement, its measures, and its monitoring process. The other side could not agree and specifically cited 208.1.2, 208.2.1, and 208.2.2, and those requirements to document directives and actions taken, as onerous.</p>
<p>The documentation should not be onerous as it is typically the same documentation currently logged in control rooms by system operators.</p>	
<p>Charles Yeung Reliant #5</p>	<p>The RA should have contractual arrangements in place with generators, transmission providers, control area operators and any entity that is required to respond to the "Actions" and "Action Plan" that expressly provides the RA the authority to execute this</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

	Requirement.
	<p>The RA Certification SAR includes the following language: "Agreements must be in place defining the responsibilities and authority of the RELIABILITY AUTHORITY with respect to all Balancing Authorities, Interchange Authorities, Transmission Operators, Transmission Service Provider and all other applicable functional entities within the reliability area and with other Reliability Authorities. Agreements shall address both normal and emergency operations."</p> <p>This requirement places sanctions on entities that do not follow the RA's directives and assumes that the authority for issuing those directives has already been agreed upon as part of the RA Certification process.</p>
<p>Susan Morris SERC #2            Bill Reinke SERC #2            Sam Stryker Fayettevill PWC #3, 4, 5            Carter Edge SEPA #4, 5            Bill Thompson Dominion Trans #1</p>	<p>We believe the wording of this draft standard Section 208 Reliability Authority Directives, 1. Requirements, Item 1.1 is restricted to too few entities, needs to be expanded to encompass all functions and users of the power system, should recognize the RA is required to issue directives consistent with applicable tariffs and contract, and the RA is required to use Good Utility Practices. This requirement must be reworded:</p> <p>1.1. The reliability authority shall use applicable tariffs, contracts, and Good Utility Practice when directing use of the power system and all users of the power system shall follow the reliability authority's directives to:</p> <p>Prevent instances where interconnection reliability operating limits may be exceeded</p> <p>Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded</p> <p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Non-compliance could take several forms and levels of impact to reliability. The Levels of non-compliance should be objectively determined based on the evidence.</p> <p>Section 4.3.1 should be modified to read:</p> <p>4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:</p> <p>4.3.1.1. Date and time of each of directive received</p> <p>4.3.1.2. Directive issued</p> <p>4.3.1.3. Actions taken in response to directive in accordance with Measure 2.1</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

	<p>Section 5 should be modified as follows:          Levels of Non-compliance          5.3 Level one: Operations log or other data source(s) do not show one of the following:              Date and time of each of directive received              Directive issued              Actions taken in response to directive          5.4 Level two: Operations log or other data source(s) do not show any of the following:          5.1.10 Date and time of each of directive received          5.1.11 Directive issued          5.1.12 Actions taken in response to directive          5.5 Level three: Not applicable.          Level four: Did not follow directives.</p>
<p>The Functional Model provides a 'chain of command' type of functional relationship that has been supported in the development of this standard. This 'chain of command' type of structure doesn't support having the RA direct all entites performing all functions, rather the Functional Model has the RA giving directives to a subset of functions, and this subset of functions then passes on instructions to other functions.</p> <p>Including specific language that references tariffs and market issues is outside the scope of NERC's reliability standards. There is no common definition for Good Utility Practice –consequently it is not possible to enforce compliance with Good Utility Practice.</p> <p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p> <p>Other commenters also suggested additional levels of non-compliance. A level one was added to address situations where the directives were followed, but weren't documented.</p>	
<p>Gerald Rheault Manitoba Hydro #1, 3, 5, 6</p>	<p>the documentation in 4.1 is incomplete. For purpose of determining the acceptability of this item it was assumed that the intent was for the documentation to be similar to the wording for 207 item 4.1</p>
<p>The posted document was missing some data, but this was corrected and the missing information was added after the first few days of the 60-day posting.</p>	
<p>FRCC Op, Eng &amp; Mkt Int Linda Campbell FRCC #2</p>	<p>Clarification of who is the entity responsible needs to be made throughout this requirement 208.</p>



**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<p>Paul Elwing Lakeland Electric # 3          John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eirc Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>	<p>Step 4.1 of the compliance monitoring process is not complete. It would seem that this 208 is a complement to 204. In 204 the RA is already documenting the actions directed, along with information if a violation occurred. This states that a level 4 is obtained if they did not follow directives. It would seem to make sense to only have this if they did not follow directives and a violation occurred. Perhaps consideration needs to be given to a lower non-compliance level for not documenting their actions, or lack of actions taken when given a directive.</p>
<p>There are places in this standard where the term, 'entity responsible' is used. In these cases, more than one entity may be responsible for complying with the requirement – and a decision was made that the standard would be less cumbersome to read if the term, 'the entity responsible' was used rather than listing all the entities that must comply. For this requirement, the entities responsible include entities performing the following functions: transmission operator, balancing authority and interchange authority</p> <p>The posted document was missing some data, but this was corrected and the missing information was added after the first few days of the 60-day posting.</p> <p>Other commenters also suggested additional levels of non-compliance. A level one was added to address situations where the directives were followed, but weren't documented.</p>	
<p>Alan Boesch NPPD #1</p>	<p>Documentation is not a reliability issue          The entity should only document the actions taken. The RA should document the directive.          The level of non-compliance only deals with following the directives. Why are there measurements (documentation) that are not compliance issues? Either they should not be measurements (my choice because failure to document is not a reliability issue), or the should have a compliance measure.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<p>When it isn't possible or practical to measure performance in 'real time', the compliance monitor may use physical evidence like documentation, to assess compliance. The standard requires that both the RA and the entities following the RA's directives document the directives issued. In areas where the RA's directives weren't followed, and the compliance monitor conducts a triggered investigation, any mismatch between the records could help in the investigation.</p> <p>Several commenters suggested additional levels of non-compliance. A level one was added to address situations where the directives were followed, but weren't documented.</p>	
<p>Dan Boezio &amp; Raj Rana AEP #1, 3, 5, 6</p>	<p>Defined terms should be capitalized, such as "Reliability Authority", "Operational Planning Analyses", "Interconnected Reliability Operating Limits", etc</p> <p>208.1.1: Add generator operator.</p> <p>208.2.1: The requirement for the entity responsible to follow the Reliability Authority's directives is already stated in the requirements section and does not need to be restated in the measures section. Suggest rewording as follows: "The entity responsible shall document the directives of the Reliability Authority and the actions taken to meet those directives."</p>
<p>The suggestion that defined terms be capitalized has been adopted and is reflected in the revised standard.</p> <p>The generator operator was not added to the list of functions that must comply with this standard because under the Functional Model, the generator operator takes direction from the balancing authority, not the reliability authority.</p> <p>Some commenters indicated a preference for including a measure that specifically addresses each of the requirements. The measures are intended to identify the elements that the compliance monitor will look at to determine if the desired performance has been achieved –there is nothing wrong in including the same language in both the requirement and the measures.</p>	
<p>Tony Jankowski We Energies #4</p>	<p>Modify section 208.5.1 to read "Level one: Did not properly document an issued directive and/or the subsequent action taken."</p>
<p>Several commenters suggested additional levels of non-compliance. A level one was added to address situations where the directives were followed, but weren't documented.</p>	
<p>Michael Sidiropoulos Pacificorp</p>	<p>Suggestion: Include generator operator in section 1.1</p>
<p>The generator operator was not added to the list of functions that must comply with this standard because under the Functional Model, the generator operator takes direction from the balancing authority, not the reliability authority.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<p><u>Operating Reliability Working Group SPP</u>  Gerry Burrows KCP&amp;L #1  Bob Cochran SPS #1  Peter Kuebeck OG&amp;E #1  Scott Moore AEP #1  Tom Stuchlik Westar #1  Dan Boezio AEP #1  Matt Bordelon CLECO #1  Mike Crouch WFEC #1  Mike Gammon KCP&amp;L #1  Kevin Goolsby SPP #2  Bo Jones Westar #1  Allen Klassen Westar #1  Thad Ness AEP #1  Harold Wyble KCP&amp;L #1  Robert Rhodes SPP #2</p>	<p>Generator operators need to be added to the entities listed in Requirement 1.1.</p> <p>Requirement 1.2 is repeated again in Measure 2.1.</p> <p>The levels of non-compliance need to be reviewed to ensure that they accurately reflect how well the directives were followed. Timing of actions taken with regards to when the directives were issued should also be considered.</p>
<p>The Functional Model provides a 'chain of command' type of functional relationship that has been supported in the development of this standard. This 'chain of command' type of structure doesn't support having the RA direct all entites performing all functions, rather the Functional Model has the RA giving directives to a subset of functions, and this subset of functions then passes on instructions to other functions. The generator operator was not added to the list of functions that must comply with this standard because under the Functional Model, the generator operator takes direction from the balancing authority, not the reliability authority.</p> <p>Some commenters indicated a preference for including a measure that specifically addresses each of the requirements. The measures are intended to identify the elements that the compliance monitor will look at to determine if the desired performance has been achieved –there is nothing wrong in including the same language in both the requirement and the measures.</p> <p>In many instances, how well a RA's directives are followed is a function of the communication skills of the system operator providing direction. If the RA's directives include timing, then it is fair to include a consideration of timing when assessing non-compliance. If the RA's directives do not include a timing requirement, then this would be impossible to measure objectively.</p>	
<p><u>MAAP Ops Subcommittee #2</u>  Llyod Linke MAPP  Allan Silk Manitoba Hydro  Paul Brune NPPD  Tod Gosnell Omaha Public Pwr Dist  Paul Koskela Minnesota Pwr  Larry Larson Otter Tail Power</p>	<p>Please clarify if the intention here is for entities to comply with the RAs directives in cases that those directives are proscribed by an existing operating guide – or in all cases? If a Reliability Authority is issuing an order that conflicts with a standing operating guide, then the RA must first explicitly/formally invalidate the guide prior to issuing the directive. Please provide information regarding how liability will be assigned for actions that are found to be improper that result in harm.</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<p>Derrick Moe WAPA  Dick Pursley Great River Energy  Martin Trency Xcel Energy  Joseph Knight MAPPCOR</p>	
<p>This requirement addresses following the RAs directives issued relative to preventing or mitigating instances of exceeding IROLs. These directives may include proscribed actions from the RAs Action Plan (requirement 207) or may be a new set of actions based on the current operating conditions. In some cases, the RA doesn't have time to provide a detailed explanation of why an Action Plan isn't being followed. Addressing liability issues is outside the scope of the SDT but may be addressed in formal agreements with the RA.</p>	
<p>Darrell Richardson Illinois Power #1, 3</p>	<p>This does not allow for a directive to be challenged. It is either comply with the directive or don't and suffer the results. It would seem that you should have the right to request additional or further discussion surrounding the directive.</p>
<p>In some cases, the RA doesn't have time to provide a detailed explanation of why an Action Plan isn't being followed. In some circumstances, an RA must contact several different entities, asking each entity to take a different action. Requesting additional information from the RA or holding a discussion with the RA may be possible, and there is nothing in this standard that precludes that.</p>	
<p>Ed Davis Entergy Services #1</p>	<p>We believe the wording of this draft standard Section 208 Reliability Authority Directives, 1. Requirements, Item 1.1 is restricted to too few entities, needs to be expanded to encompass all functions and users of the power system, should recognize the RA is required to issue directives consistent with applicable tariffs and contract, and the RA is required to use Good Utility Practices. This requirement must be reworded:</p> <p style="color: red;">1.1. The reliability authority shall use applicable tariffs, contracts, and Good Utility Practice when directing use of the power system, and all users of the power system shall follow the reliability authority's directives to:</p> <p>1.1.1.1. Prevent instances where interconnection reliability operating limits may be exceeded</p> <p>1.1.1.2. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded</p>
<p>The Functional Model provides a 'chain of command' type of functional relationship that has been supported in the development of this standard. This 'chain of command' type of structure doesn't support having the RA direct all entites performing all functions, rather the Functional Model has the RA giving directives to a subset of functions, and this subset of functions then passes on instructions to other functions.</p> <p>Including specific language that references tariffs and market issues is outside the scope of NERC's reliability standards. There is no common definition for Good Utility Practice –consequently it is not possible to enforce compliance with Good Utility Practice .</p>	
<p>SERC Operations Planning Subcommittee  Carter Edge SEPA #4, 5</p>	<p>Generally, the Measures should be tied to the Requirements and the Objective Evidence for Compliance (OEC) should be tied to the Measures. Non-compliance could</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard Requirement 208 – RA Directives**

<p>William Gaither So Carolina Pub Serv Auth #1          Mike Miller Southern Co #1          Roger Brand Muni Elec Auth GA #1          Phil Creech Progress Energy – CP&amp;L #1          Gene Delk So Carolina Elec &amp; Gas #1          Al McMeekin So Carolina Elec &amp; Gas #1          Greg Ott Alcoa-Yadkin #1          Doug Newbaue GA System Operations #1          Mike Clements TVA #1          Don Reichenbach Duke Energy #1          Lynna Estep SERC #2          Mark Creech TVA #1</p>	<p>take several forms and levels of impact to reliability. The Levels of non-compliance should be objectively determined based on the evidence.</p> <p>Section 4.3.1 should be modified to read:</p> <p style="padding-left: 40px;">4.3.1. Operations log or other data source(s) to show the following for each instance of being issued a reliability authority directive relative to an interconnection reliability operating limit:</p> <p style="padding-left: 80px;">4.3.1.1. Date and time of each of directive received</p> <p style="padding-left: 80px;">4.3.1.2. Directive issued</p> <p style="padding-left: 80px;">4.3.1.3. Actions taken in response to directive <b>in accordance with Measure 2.1</b></p> <p>Section 5 should be modified as follows:</p> <p>Levels of Non-compliance</p> <p>5.6 Level one: <b>Operations log or other data source(s) do not show one of the following:</b></p> <p style="padding-left: 40px;">5.1.13 Date and time of each of directive received</p> <p style="padding-left: 40px;">5.1.14 Directive issued</p> <p style="padding-left: 40px;">5.1.15 Actions taken in response to directive</p> <p>5.7 Level two: <b>Operations log or other data source(s) do not show any of the following:</b></p> <p style="padding-left: 40px;">Date and time of each of directive received</p> <p style="padding-left: 40px;">Directive issued</p> <p style="padding-left: 40px;">Actions taken in response to directive</p> <p>5.8 Level three: Not applicable.</p> <p>5.9 Level four: Did not follow directives.</p>
<p>The suggested format change was not adopted. The standards have been drafted to be as succinct as possible – and the additional words do not add anything to the standard. In addition, when the standards are completed, they will be available to the industry in a relational database with search capabilities. If the suggested cross-referencing were adopted, and someone downloaded a report that listed just the compliance elements for this standard, the cross references would lead the reader to believe that additional information could be found in the measures – and in many cases this is not true.</p> <p>Several commenters suggested additional levels of non-compliance. A level one was added to address situations where the directives were followed, but weren't documented.</p>	

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<p>Alan Johnson Mirant Americas Energy Mktg #6</p>	<p>Suggest that the generator operator function be added to section 1.1. Regarding the levels of non-compliance, agree that an entity should be penalized for not following a RA's directive, but question whether it is appropriate to take every violation to level four.</p>
<p>The generator operator was not added to the list of functions that must comply with this standard because under the Functional Model, the generator operator takes direction from the balancing authority, not the reliability authority.</p> <p>Most industry commenters supported a level four violation for not following the RA's directives.</p>	
<p><u>Southern Company Generation &amp; Energy Mktg</u>          Roman Carter # 5, 6          Joel Dison #5,6          Tony Reed #5,6          Lucius Burris #5,6          David Deerman #5,6          Clifford Shepard #5,6          Michael Smith #5,6          Lloyd Barnes SCGEM 5,6          Gary Miller SCGEM 5,6          Terry Crawley Southern Generation 5          Roger Green Southern Generation 5</p>	<p>If the RA makes an unreasonable request for data, whether it be the type of data needed or the timing of the data, the Transmission Operator, Balancing Authority, and the Interchange Authority will be considered totally (level 4) out of compliance if they do not fully comply. Therefore, a graduated scale is recommended.</p>
<p>This requirement is for RA directives relative to preventing or mitigating instances of exceeding IROLs. The data provision requirement was modified to indicate that there will only be a level four non-compliance if data is not provided as specified and the entities involved aren't able to resolve the situation. If an RA makes an unreasonable request for data, then the entity required to provide the data could try to resolve the issue with the RA or could use the dispute resolution process to resolve the issue. Note that the requirement that addresses the RA's Data Specification was modified to state more clearly that the data addressed by the data specification is limited to the data needed by the RA for monitoring and assessments relative to IROLs.</p>	

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**Do you agree with the definitions provided in the front of this standard?**

**Summary Consideration:** The SDT made the following changes based on comments submitted by industry participants.

The following definitions are not used in the standard and have been eliminated:

- Documentable Interconnection Reliability Operating Limit Violation
- Interconnection Reliability Operating Limit Violation
- Reportable Interconnection Reliability Operating Limit Violation.

Two new terms were added, “Event Duration” and “Wide Area Impact”

Real-time Monitoring and Real-time Assessments were revised to improve the distinction between the two terms. Real-time Monitoring is more passive than Real-time Assessments and the revised definitions help clarify this.

The term, “Reliability Authority Area” was revised to conform with the definition provided in the draft changes to the Functional Model.

The term, “Self-certification” was revised to better reflect the intent of the self-certification process.

The term, “T<sub>v</sub>” was revised to better align with its application in this standard.

The term, “Real-time” was revised to better convey what was intended when this term is used in the standard.

Where a definition had included additional language to explain how the term applied to this standard, the additional language was dropped from the definition. This approach was applied to the following terms:

- Interconnection Reliability Operating Limit
- Operational Planning Analysis

The definition for Transmission Operator was transposed with that for Transmission Service Provider and this has been corrected.

Where an individual comment was submitted recommending a change to a term that was approved as part of the NERC Glossary of Terms, the definition was not changed.

- Bulk Electric System
- Cascading Outages
- Real – time Assessment
- Self - certification

Other minor ‘wordsmithing’ changes were made

Commenter	Yes	No	Comments
FRCC Op, Eng & Mkt Int Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3	x		Most of the definitions are very helpful. However, we do have some questions on a few of them. - There is a definition for Real-time Monitoring and one for Real-time

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<p>John Shaffer FPL #1          Bob Remley Clay Elec Coop #4          Patti Metro FRCC #2          Eric Grant Progress Energy – FL #1          Joe Roos Ocala Electric Utility #3          Joe Krupar FL Muni Pwr Agency #3          Richard Gilbert Lakeland Electric #3          Bill Slater Progress Energy – FL #1          Amy Long Lakeland Electric #1          Roger Westphal Gainesville Regional Util #5          Bob Goss SEPA #5          Steve Wallace Seminole Electric Coop #4          Ted Hobson JEA #1</p>			<p>Assessment. The monitoring definition states "To use vision and hearing.." while the assessment definition states to collect and review immediately available data. It seems to us that the monitoring definition is really unnecessary, as we believe the intent is really covered in the assessment definition.</p> <ul style="list-style-type: none"> <li>- The definition for Operational Planning Analysis states, "The analysis should ensure that no IROLs will be exceeded." Is that really true for the analysis? Doesn't the analysis identify potential problems that need to be acted upon, so that it is really the actions of entities, not the analysis itself, that ensures no limit will be exceeded?</li> <li>- The definition of transmission operator in this document does not agree with the definition of transmission operator in the Functional Model. This definition actually is the same as the transmission service provider function. It appears there is still confusion over the functions defined in the functional model which is alarming since we are developing the reliability standards based on those functions.</li> </ul>
<p>The definitions for real-time monitoring and real-time assessments were revised to better distinguish between monitoring and assessing. The revised definitions clarify that assessing is more active than monitoring.</p> <p>The definition of the Operational Planning Analysis was revised as follows: <b>Operational Planning Analysis:</b> An examination of the expected system conditions, given the load forecast(s) and known system constraints, some examples being transmission facility outages, generator outages and equipment limitations. <del>"The analysis should ensure that no interconnection reliability operating limits will be exceeded during expected normal operation. An operational planning analysis is done up to seven days ahead of the expected conditions."</del> The descriptive information following the first sentence was dropped because it was not really part of the definition.</p> <p>As noted, the definition of Transmission Operator was incorrectly copied from the Functional Model. This was a transposition error, not an indication of confusion over the definitions.</p>			
<p><u>Centerpoint Energy #1</u>          Richard Sikes          John Jonte          Wayne Kemper          Glenn Hemperley          Brad Calhoun</p>	<p>x</p>		<p>We do not understand the total reason for changing Operations Security Limit to Interconnection Reliability Operating Limit, given its implications.</p>
<p>The Operating Limits Definitions Task Force (OLDTF) met with the Standards Drafting Team (SDT) and encouraged the SDT to adopt as much of the work of the OLDTF as possible. The OLDTF determined that the term, "Operations Security Limit" was interpreted to mean different things by different entities, and recommended that the SDT avoid use of the term, "Operations Security Limit".</p>			
<p>John Horakh MAAC #2</p>	<p>x</p>		<p>The definitions involving Interconnection Reliability Operating Limit need to be cleaned up to increase clarity and to eliminate duplication.</p>



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			<p>Remove the definition for “Documentable Interconnection Reliability Operating Limit Violation”</p> <p>Remove the definition for “Reportable Interconnection Reliability Operating Limit Violation”</p> <p>Change, as follows, the definition for “Interconnection Reliability Operating Limit Event: An instance of exceeding an Interconnection Reliability Operating Limit for any length of time. The event must be documented (logged).”</p> <p>Change, as follows, the definition for “Interconnection Reliability Operating Limit Violation: An instance of exceeding an Interconnection Reliability Operating Limit for a time greater than or equal to Tv. This is an event that has progressed to also become a violation. The event must be documented and the violation must be reported (to the compliance monitor).”</p>
<p>The definitions for Documentable IROL, Reportable IROL Violations, and IROL Violations are not used in the standard and have been dropped. Suggested changes for adding more language to the definitions were not supported because several entities requested the exact opposite change. Explanatory information that identifies how the term is applied in a particular standard is not needed.</p>			
<p>Albert DiCaprio MAAC #2</p> <p>David Thorne Pepco #1</p> <p>Robert Grover PPL Elec Util #3</p>	<p>x</p>		<p>I would suggest that the terms Documentable IROL Violation and IROL Event be combined in a single definition. Offer the following: IROL Event: An instance.....for any length of time. These events are documentable IROL violations. Similarly for IROL Violation and Reportable IROL Violation.</p>
<p>The definitions for Documentable, Reportable IROL Violations, and IROL Violations are not used in the standard and have been dropped. Suggested changes for adding more language to the definitions were not supported explanatory information that identifies how the term is applied in a particular standard is not needed.</p>			
William Smith Allegheny Power #1	x		
Ken Githens Allegheny Energy Supply #5	x		
Raymond Mammarella PPL Elec Util #1	x		
Darrell Richardson Illinois Power #1, 3	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		
Peter Burke ATC #1	x		
Charles Yeung Reliant #5	x		
Alan Boesch NPPD #1		x	<p>The definition for Transmission Operator is incorrect. The definition is word for word the definition of the Transmission Service Provider in the Functional Model. It appears the wrong definition was used. The</p>

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			right definition is in the functional model.
As noted, the definition of Transmission Operator was incorrectly copied from the Functional Model.			
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	<p>“Documentable Interconnection Reliability Operating Limit Violation” and “Interconnection Reliability Operating Limit Event” have identical definitions. Two terms having the same definition leads to confusion. Eliminate one of the terms and modify Standard accordingly.</p> <p>“Interconnection Reliability Operating Limit” definition - Second sentence contains a reporting requirement for the Reliability Authority. A definition should simply define the term. Required actions are to be contained in the standard itself. Delete sentence two. First sentence is confusing it that it appears to imply that there just may be certain situations where “instability, uncontrolled separation, or cascading outages” may NOT “adversely impact the reliability of the bulk transmission system”. Assuming this is not the intent, consider rewording as:</p> <p>Interconnection Reliability Operating Limit: A System Operating Limit on the Bulk Electric System that if exceeded, could lead to instability, uncontrolled separation, or cascading outages.</p> <p>Real-time Monitoring: Standard 202 implies that “Real-time Monitoring” is an activity to be performed as opposed to equipment in place that simply facilitates that function. Consider rewording as:</p> <p>Real-time Monitoring: Draw conclusions from various Real-time Data sources.</p> <p>Operational Planning Analysis: The last sentence specifies that such an analysis is performed up to seven days ahead of expected conditions. Sentence is unnecessary and confusing. Neither 203.1 or 203.2 does not specify a time horizon for the Operational Planning Analysis beyond the ‘next day’.</p> <p>Real-time: definition not necessary, consider deleting.</p> <p>Real-time Data: Consider rewording as “ Readily available measured values of existing system parameters, state estimator values.....”</p> <p>Tv: Definition confusion. Consider: Minimum time of a system parameter that exceeds an Interconnection Reliability Operating Limit</p>

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		<p>that requires a report to the Compliance Monitor.</p> <p>Real-time Assessment: The second sentence is not needed. Required actions are to be contained in the standard itself. Additionally, real-time assessments can be performed others, not just the RA.</p> <p>“Interconnection Reliability Operating Limit Violation” and “Reportable Interconnection Reliability Operating Limit Violation” have the same definition. Two terms having the same definition leads to confusion. Eliminate one of the terms and modify Standard accordingly.</p> <p>Self-certification: Remove the second and third sentences. They are editorial comments that do not belong in a definition. If the comments are relevant to a particular standard, then they belong in the Compliance Monitoring Process section of the Standard.</p> <p>Transmission Operator: The definition given sounds more like the definition of a Transmission Service Provider. The Functional Model Review Task Force in their January 1, 2003 Group Report defined Transmission Operator as: “The entity that operates the transmission facilities and executes switching orders.”</p>
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1. The definition for Documentable IROL is not used in the standard and has been dropped.
2. Explanatory information that identified how the term, "IROL" would be applied in this standard is not needed and has been dropped. Suggested change to remove the phrase, ". . . adversely impact the reliability of the bulk transmission system." Was not adopted. This language has been used in the standard since the initial posting of the SAR.
3. The definition of "Real-time Monitoring" was modified to read as follows: "The act of scanning data and drawing conclusions about what the data indicates." This supports the recommended change while retaining the words needed to reinforce the concept that this requires some physical activity.
4. The definition of "Operational Planning Analysis" was truncated so that the explanatory information was dropped from the definition.
5. The definition was added at the request of several industry participants.
6. The definition of "Real-time data" was not changed as suggested. Although the suggested change would keep from using part of the term in the definition of the term, the suggested change did not improve the understandability of the definition and was not adopted.
7. The definition of  $T_v$  was revised to read as follows: "The maximum time that an IROL can be exceeded without compliance sanctions being applied." This supports the recommended change as well as changes recommended by others.
8. The definition of "Real-time Assessment" was truncated so that the explanatory information was dropped from the definition.
9. The definition for Reportable IROL Violation is not used in the standard and has been dropped.
10. The definition of "Self-certification" was truncated so that the explanatory information was dropped from the definition. The definition was further revised to more clearly identify the intent of the self-certification process, based on changes recommended by others.
14. As noted, the definition of Transmission Operator was incorrectly copied from the Functional Model.

John Blazekovich Exelon Corp #1, 3, 5, 6		x	<p>Exelon recommends the following definition changes to eliminate terminology from the definitions that is vague and therefore can lead to different interpretations and uncertainty as to whether there is a violation of the standard.</p> <p>Cascading Outages: The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading. <del>beyond an area predetermined by appropriate studies.</del></p> <p>Interconnection Reliability Operating Limit: A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages. <del>that adversely impact the reliability of the bulk transmission system.</del> The reliability authority must log each case of</p>
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			exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to Tv. Note that Tv may be zero.
<p>The term, “Cascading Outages” was not changed. The original definition better relays the ideas supported in this standard. In addition, the original definition was reviewed and approved as part of the NERC Glossary of Terms.</p> <p>Suggested change to remove the phrase, “. . . adversely impact the reliability of the bulk transmission system.” was not adopted. This language has been used in the standard since the initial posting of the SAR.</p>			
Tom Pruitt Duke Power #1		x	A definition for Minimum Return Time should be included (the minimum period in seconds that a value must remain below an IROL limit after an excursion has occurred. If the value again exceeds IROL before this time limit, the event continues.).
<p>The definition was not added because it is no longer needed. Specific language was added to the standard to identify that the duration of exceeding any IROL is measured from the point in time where the IROL is first exceeded to the point in time where the parameter’s value remains at a level at or below the IROL for a minimum of 30 seconds.</p>			
Tony Jankowski We Energies #4		x	Real time monitoring: Vision and hearing does not comply with the Americans with Disabilities Act. “To use human or automated means” Reliability Authority Area: “interconnection (tie-line) metering”. This provision is for a Balancing Authority and Energy Management, not the RA. The Reliability Authority area consists of all assets under the control and responsibility of the RA.
<p>The Americans with Disabilities Act does not preclude any organization from establishing physical requirements based on the ‘essential duties’ of a specific job. Monitoring system conditions is an essential system operator duty. The term, ‘real-time monitoring’ was revised by replacing the phrase, “To use vision and hearing to scan. . .” with the phase, “The act of scanning . . .”</p> <p>The “Reliability Authority Area” was not defined in the original Functional Model. The latest draft of proposed changes to the Functional Model does include a definition of the Reliability Authority Area and this was adopted in the changes to this standard.</p>			
Michael Sidiropoulos Pacificorp		x	In the definition of cascading outages the term “beyond an area predetermined by appropriate studies” should be specifically defined. Suggestion: “beyond the control area of the initial disturbance”.
<p>These new reliability standards are being written assuming that the industry is organized using the terminology in the Functional Model – so in the new standards the Reliability Authority Reliability Area is used instead of a Control Area. Some relays are installed as a result of joint studies conducted to look at a sequence of actions that may occur in a region that is greater than a single Reliability Authority’s Reliability Area.</p>			
Operating Reliability Working Group SPP Gerry Burrows KCP&L #1 Bob Cochran SPS #1		x	The SDT should utilize the NERC functional model and thoroughly review and correct all definitions associated with this standard. Some definitions included in this standard are not needed and others don’t

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<p>Peter Kuebeck OG&amp;E #1          Scott Moore AEP #1          Tom Stuchlik Westar #1          Dan Boezio AEP #1          Matt Bordelon CLECO #1          Mike Crouch WFEC #1          Mike Gammon KCP&amp;L #1          Kevin Goolsby SPP #2          Bo Jones Westar #1          Allen Klassen Westar #1          Thad Ness AEP #1          Harold Wyble KCP&amp;L #1          Robert Rhodes SPP #2</p>			<p>appear to belong in the standard. Others are simply the wrong definition. Noting the comment box on page 3 of the standard, we wonder why a definitions section was even included in the standard.</p> <p>Here are some specific problem definitions:          Real-time Monitoring and the use of vision and hearing to define this term.          Real-time – Shouldn't historical time also be included?          Self-certification – Why is this term included in this standard? It probably belongs in the Compliance Enforcement Document. The second sentence doesn't appear to be a part of the definition.          Transmission Operator has the wrong definition. The definition given is the definition for Transmission Service Provider.          Documentable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Event have the exact same definition.          Reportable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Violation are basically the same definition.          Tv should be listed as T<sub>v</sub>.</p>
<p>The term, 'real-time monitoring' was revised by replacing the phrase, "To use vision and hearing to scan. . ." with the phase, "The act of scanning . . ."</p> <p>It is not clear why historical time should be included in a definition of real time.</p> <p>Self-certification is used in this standard and hasn't been previously defined in the glossary of terms associated with Reliability Standards. Several entities requested that the term be defined during the last posting of this standard.</p> <p>The definition for Transmission Operator was transposed with the definition for Transmission Service Provider.</p> <p>Reportable Interconnection Reliability Operating Limit Violation and Interconnection Reliability Operating Limit Violation are not used in the standard and have been dropped from the list of defined terms.</p> <p>The missing subscript "Tv" rather than "T<sub>v</sub>", is a typo and has been corrected.</p>			
<p><u>Southern Co Transmission Planning</u>          Todd Lucas Southern Co #1          Joe Payne Mississippi Pwr Co #3          Travis Koval Southern Co #1          Bill Pope Gulf Pwr Co #3</p>		<p>x</p>	<p>The term "Documentable Interconnection Reliability Operating Violation" is never used in the standard and has the same definition as "Interconnection Reliability Operating Event". Likewise, the term "Reportable Interconnection Reliability Operating Violation" is never used in the standard and has the same definition as "Interconnection Reliability Operating Violation". We suggest that the terms</p>

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<p>John Clark Southern Co #1 David Johnson Savannah Electric #3</p>			<p>"Documentable Interconnection Reliability Operating Violation" and "Reportable Interconnection Reliability Operating Violation" be deleted from the list of definitions.</p>
<p>The terms, "Documentable Interconnection Reliability Operating Violation" and "Reportable Interconnection Reliability Operating Violation" were dropped from the list of definitions.</p>			
<p><u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy Martin Trence Xcel Energy Joseph Knight MAPPCOR</p>		<p>x</p>	<p>Operational Planning Analysis – Omit the word "peak" in the first sentence as a qualifier for load. There may be instances where reliability is compromised during non-peak load conditions. The analysis should be done over a range of loads based on forecasts.</p>
<p>The suggested change was made.</p>			
<p><u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens</p>		<p>x</p>	<p>Operational Planning Analysis - There should be no time component to this definition. As long as it has been completed prior to when it is needed. Tv - Should include maximum response time.</p>
<p>Operational Planning Analysis - The descriptive information following the first sentence was dropped because it was not really part of the definition.</p>			
<p>T<sub>v</sub> – The definition was revised to include a reference to maximum response time. The revised definition is: "The maximum time that an IROL can be exceeded without compliance sanctions being applied"</p>			
<p>Donald Idzior Consumers Energy #4</p>		<p>x</p>	<p>I would recommend the definition Tv and section 1.2.1 be made consistent. As the standard now reads, the definition of Tv is the violation time associated with a limit. Section 1.2.1 refers to the identification of Tv as a response time. Those are two very different things.</p>

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			<p>The response limit must be the total time from when a flow/voltage/stability limit is first violated to when operator action is initiated and finally the system (transaction curtailments/generation redispatch/switching/load control action...) responds to bring the violated operating limit back to below the limit.</p> <p>The definition should be changed to bring it in line with the usage in the standard.</p>
<p><b>T<sub>v</sub> – The definition was revised to include a reference to maximum response time. The revised definition is: “The maximum time that an IROL can be exceeded without compliance sanctions being applied“</b></p>			
<p>Ed Davis Entergy Services #1</p> <p>Susan Morris SERC #2</p> <p>Bill Reinke SERC #2</p> <p>Sam Stryker Fayettevill PWC #3, 4, 5</p> <p>Carter Edge SEPA #4, 5</p> <p>Bill Thompson Dominion Trans #1</p>		<p>x</p>	<p>Operational Planning analyses are conducted for time periods up to 13-months into the future. Please revise the definition as follows: Operational Planning Analysis: “ .... An operational planning analysis is done for the next day’s operation and up to 13-months ahead of the expected conditions.”</p> <p>The Transmission Owner has fiduciary responsibility for his owned facilities. Therefore he has ultimate responsibility and liability for owning, maintaining and operating his facilities to protect his stockholders’ and lending institutions’ investments. The Transmission Owner then is ultimately responsible for establishing system operating limits, including T<sub>v</sub>, for his facilities. Therefore, the definition of T<sub>v</sub> should be revised to: “T<sub>v</sub>: The violation time associated with a limit that is determined by the Transmission Owner for equipment-based limits, and by the Reliability Authority and Planning Authority for system-based limits.”</p> <p>The responsibilities of the RA are to “monitor” the system, not “control” the system. Therefore, we suggest the following change: Reliability Authority Area: A defined electrical system bounded by interconnection (tie-line) metering and telemetry monitored by a single reliability authority.</p>



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The definition of “Operational Planning Analysis” was truncated to omit the language that explained how the term applied to this standard. The revised definition of Operational Planning Analysis is as follows: “An examination of the expected system conditions, given the load forecast(s), known system constraints some examples being transmission facility outages, generator outages and equipment limitations.”

The recommended change to T<sub>v</sub> was not made, because the responsibility for establishing reliability-related limits is assigned to the Reliability Authority, not the equipment owners. The Determine Facility Ratings SDT is working on the standard that establishes the facility owners’ rights to establish facility ratings – and requires the entities that develop operating limits to respect the facility ratings in developing the operating limits.

The term, “Reliability Authority Area” was revised to conform with the definition provided in the draft changes to the Functional Model. Your recommendation that the standard reflect that the RA monitor rather than control the system was adopted and is reflected in the changes made to the monitoring requirement (202).

<p><u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&amp;L #1 Gene Delk So Carolina Elec &amp; Gas #1 Al McMeekin So Carolina Elec &amp; Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1</p> <p>Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1</p>		x	<p>Based on the following definitions, we do not believe that the definition of “<i>Documentable Interconnection Reliability Operating Limit Violation</i>” is necessary (is it truly a violation?). It appears that it is identical to the definition of “<i>Interconnection Reliability Operating Limit Event</i>” and the fact that an “<i>event</i>” must be documented is contained in the definition of “<i>Interconnection Reliability Operating Limit</i>”.</p> <p>Documentable Interconnection Reliability Operating Limit Violation: An instance of exceeding an interconnection reliability operating limit for any length of time.</p> <p>Interconnection Reliability Operating Limit Event: An instance of exceeding an interconnection reliability operating limit for any length of time.</p> <p>Interconnection Reliability Operating Limit Violation: An instance of exceeding an interconnection reliability operating limit for time greater than or equal to T<sub>v</sub>.</p> <p>Interconnection Reliability Operating Limit: A system operating limit that, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk transmission system. The reliability authority must log each case of exceeding an interconnection reliability operating limit, and must report (to its compliance monitor) each case of exceeding an interconnection reliability operating limit for a time greater than or equal to T<sub>v</sub>. Note that T<sub>v</sub> may be zero.</p>
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The definitions for “Documentable Interconnection Reliability Operating Limit Violation”, and Interconnection Reliability Operating Limit Violation were dropped because they are not used in the standard.

<p><u>Trans Subcommittee</u> Robert E. Reed PJM</p>		x	<p>1) All of the definitions should be cross-referenced against the Functional Model and other standards to ensure the same term has a</p>
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<p>Daniel Cooper Michigan Public Power Agency  Ken Donohoo ERCOT  Michael Gildea Duke-Energy, North America  Francis Halpin Bonneville Power Administration  Tom Mallinger Midwest ISO  Darrick Moe Western Area Power Adm  Scott Moore American Electric Power  Bill Slater Florida Power Corporation  Tom Stuchlik Western Resources  Joseph Styslinger Southern Company  David Thorne D. H. Thorne Consultants, Inc  Robert Waldele New York ISO  Roman Carter Southern Company  John Ahr Alleghany Power Systems  Susan Morris SERC  Ed Pfeiffer Ameren  Ray Palmieri ECAR  Tom Vandervort NERC</p>			<p>consistent definition. For example “Reliability Authority Area” and “Transmission Operator” within this standard is different than in the Functional Model.</p> <p>2) “Bulk Electric System” definition within this standard is a bit ambiguous. The TS knows that “Bulk Electric System” is a controversial term that has different meanings to different individuals, but a more in-depth definition is recommended (no suggestion).</p> <p>3) “Documentable Interconnection Reliability Operating Limit Violation” and “Interconnection Reliability Operating Limit Event” have identical definitions.</p> <p>4) Suggestion: “Real-time Monitoring” – Personnel are available to see and hear various real-time data sources as conditions dictate.</p>
<p>The Functional Model did not contain any definition for Reliability Authority Area.</p> <p>The definition for Transmission Operator was transposed with that for the Transmission Service Provider and this has been corrected.</p> <p>The definition for the term, “Bulk Electric System” came from the NERC Glossary, and represents the best consensus of the various NERC committees as well as the approval of the NERC BOT.</p> <p>The term Documentable IROL Violation is not used in the standard and has been dropped.</p> <p>The term, “real-time monitoring” was revised to the following: “The act of scanning data and drawing conclusions about what the data indicates.” The revised definition clearly conveys that monitoring involves more than observing – the system operator is expected to draw conclusions about the data.</p>			

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<p>Southern Company Generation &amp; Energy Mktg                  Roman Carter # 5, 6                  Joel Dison #5,6                  Tony Reed #5,6                  Lucius Burris #5,6                  David Deerman #5,6                  Clifford Shepard #5,6                  Michael Smith #5,6                  Lloyd Barnes SCGEM 5,6                  Gary Miller SCGEM 5,6                  Terry Crawley Southern Generation 5                  Roger Green Southern Generation 5</p>		x	<p>All the definitions should be cross-referenced against the Functional Model and other Standards to ensure the same term has a consistent definition. In particular, Reliability Authority Area and Transmission Operator have different wording than the Functional Model</p>
<p>The approved Functional Model does not contain any definition for Reliability Authority Area. The latest set of proposed changes to the Functional Model did contain a draft definition for the “Reliability Authority Area” and this was used in the changes made to the standard.</p>			
<p>The definition for Transmission Operator was transposed with that for the Transmission Service Provider and this has been corrected.</p>			
<p>Gerald Rheault Manitoba Hydro #1, 3, 5, 6</p>		x	<p>Interconnection Reliability Operating Limit The first sentence is the complete definition. The rest is a description of activities related to this definition and should not be included here.</p> <p>Real-time Monitoring. This should be modified to “The act of using human vision and hearing or computer software to scan various real-time data sources and draw conclusions about what the data indicates.</p> <p>Real-time The word present time should be used instead of immediate.</p> <p>The words present or presently should be used instead of immediate or immediately in context to real-time in any definition contained in this Standard.</p> <p>Self-certification should be changed to “ A process by which an entity does a self evaluation to determine if it is compliant with the specific requirements for a reliability standard”. The rest can remain the same.</p>

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<p>The definition of IROL was revised so the explanatory information following the first sentence has been dropped.</p> <p>The suggested revision to “Real-time Monitoring” was adopted.</p> <p>The intent of the revision to “Real-time” was adopted – the new definition uses the word, ‘present’ instead of ‘immediate’. Placing the word, ‘present’ in all definitions containing the phrase, ‘real-time’ led to cumbersome phraseology and didn’t seem necessary.</p> <p>The suggested change for self-certification was adopted.</p>			
Ron Falsetti IMO #2		x	<p>Tv – This definition seems to reflect the compliance violation time frame, but the usage of the Tv term in the draft standard is the ‘maximum acceptable response time’ as determined by the RA/PA BPS (Bulk Power System) - Definition for BPS Is required Reliability Authority does not have “control” of the system, but provides direction to the asset owners/operators. Therefore, suggest the following change:</p> <p>Reliability Authority Area: A defined electrical system bounded by interconnection (tie-line) metering and telemetry under the direction of a single reliability authority.</p> <p>The definition of “Documentable Interconnection Reliability Operating Limit Violation” appears to be redundant to the definition of “Interconnection Reliability Operating Limit Event.” Suggest deletion of “Documentable Interconnection Reliability Limit Violation.”</p>
<p>T<sub>v</sub> – The definition was revised to include a reference to maximum response time. The revised definition is: “The maximum time that an IROL can be exceeded without compliance sanctions being applied“</p> <p>The term, “Bulk Power System” has been defined and was included in the last posting of the standard. This term was copied from the NERC Glossary of Terms. “A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk transmission system.”</p> <p>The term, “Reliability Authority Area” was revised to conform with the proposed definition in the latest draft changes to the Functional Model.</p> <p>The term, “Documentable Interconnection Reliability Limit Violation” was dropped from the standard.</p>			
<p>Kathleen Goodman ISO-NE #2</p> <p><u>NPCC CP9</u></p> <p>Michael Schiavone National Grid USA #1</p> <p>Roger Champagne Hydro-Quebec TransEnergie #1</p> <p>Ralph Rufrano New York Power Authority #1</p> <p>David Little Nova Scotia Power Inc. #1</p> <p>David Kiguel Hydro One Networks #1</p> <p>Michael Potishnak ISO-New England #2</p>		x	<p>NPCC (ISO-NE) feels that with respect to T<sub>v</sub> there must be an established process through which this is derived or the re-preparation time of thirty minutes should become the standard default absent such a process.</p> <p>Regarding Cascading Outages; There is no guidance on how the parameters are to be defined which would permit the identification of the local area and the widespread area. It also fails to recognize that a local area problem may evolve into a wider area problem</p>

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Barry Gee Dan Stosick Fernando Saavedra Greg Campoli	National Grid USA ISO-New England ISO-New England New York ISO	#1 #2 #2 #2			depending on the load, time of day, recent contingencies and other factors. A well-defined process for determining what is (and what is not) a reportable event is essential.
<p>Because <math>T_v</math> is a risk-based value, different RAs (or Regions, or Interconnections) are expected to develop their own processes for establishing <math>T_v</math>. Whatever process is developed must not violate the requirements for developing System Operating Limits established in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard.</p> <p>The definition for Cascading Outages was adopted from the NERC Glossary of Terms.</p> <p>IROLs must be identified by the RA. Instances of exceeding IROLs for time greater than the IROL's <math>T_v</math> are reportable.</p>					
Terry Bilke	Midwest ISO			x	The "Transmission Operator" definition appears to be a definition for transmission provider. The functional model defines Transmission Operator as "Operates and maintains the transmission facilitates and executes switching orders".
<p>As noted, the definition for Transmission Operator was transposed with that for the Transmission Service Provider – and this has been corrected.</p>					

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**Do you agree with the SDT that the redundant requirements for the Transmission Operator should be deleted from this standard?**

**Summary Consideration:** Most commenters agreed with the elimination of the redundant TOP requirements. The SDT sent a request to the Director-Standards, asking that action be taken to determine if another SAR is needed to address system operating limits that are not included in this standard. This request was forwarded to the Operating Committee for their consideration. If this standard is approved and is implemented prior to RA Certification, each control area would be responsible for compliance with this standard.

Commenter	Yes	No	Comments
Stuart Goza TVA #1	x		This standard should be modified to specify non-redundant requirements for the TO responsibilities for operating within system operating limits or a separate standard created for this issue.
The SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits.			
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		The responsibility for monitoring IROLs, addressed in this Standard, rests with the Reliability Authority as defined in the Functional Model. However Manitoba Hydro believes there is also a reliability requirement to monitor real-time operations for all other system operating limits (SOL) which are not identified as IROLs. If it is not appropriate to include these monitoring requirements in this Standard, then another Standard should be created to address this requirement.
The SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits.			
Tony Jankowski We Energies #4	x		Comments: The Transmission Operator should have operating performance requirements developed in another Standard.
The SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits.			
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5 William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1	x		This should not preclude the Transmission Operator from conducting independent analysis.

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Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
<b>Agreed. There is nothing in this standard that precludes the Transmission Operator from conducting independent (or coordinated) analyses.</b>			
Ken Githens Allegheny Energy Supply	x		AE agrees that two organizations controlling the same limit is not productive.
<b>This was the consensus of the comments submitted by industry participants.</b>			
William Smith Allegheny Power #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
Kathleen Goodman ISO-NE #2	x		
Albert DiCaprio MAAC #2	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
Mark Heimbach PPL Generation #6	x		

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<p><u>Trans Subcommittee</u>          Robert E. Reed PJM          Daniel Cooper Michigan Public Power Agency          Ken Donohoo ERCOT          Michael Gildea Duke-Energy, North America          Francis Halpin Bonneville Power Administration          Tom Mallinger Midwest ISO          Darrick Moe Western Area Power Adm          Scott Moore American Electric Power          Bill Slater Florida Power Corporation          Tom Stuchlik Western Resources          Joseph Styslinger Southern Company          David Thorne D. H. Thorne Consultants, Inc          Robert Waldele New York ISO          Roman Carter Southern Company          John Ahr Alleghany Power Systems          Susan Morris SERC          Ed Pfeiffer Ameren          Ray Palmieri ECAR          Tom Vandervort NERC</p>	<p>x</p>		
<p><u>Operating Reliability Working Group SPP</u>          Gerry Burrows KCP&amp;L #1          Bob Cochran SPS #1          Peter Kuebeck OG&amp;E #1          Scott Moore AEP #1          Tom Stuchlik Westar #1          Dan Boezio AEP #1          Matt Bordelon CLECO #1          Mike Crouch WFEA #1          Mike Gammon KCP&amp;L #1          Kevin Goolsby SPP #2          Bo Jones Westar #1          Allen Klassen Westar #1          Thad Ness AEP #1</p>	<p>x</p>		



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Harold Wyble KCP&L #1 Robert Rhodes SPP #2			
Alan Boesch NPPD #1	x		
Kathleen Goodman ISO-NE #2	x		
Carter Edge SEPA #4, 5	x		
Dan Boezio & Raj Rana AEP #1, 3, 5, 6	x		
Raymond Mammarella PPL Elec Util #1	x		
Tom Pruitt Duke Power #1	x		
Robert Grover PPL Elec Util #3	x		
FRCC Op, Eng & Mkt Int Linda Campbell FRCC #2 Paul Elwing Lakeland Electric # 3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3 Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1	x		
Peter Burke ATC #1	x		
MAAP Ops Subcommittee #2 Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA	x		

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Dick Pursley Great River Energy Martin Trencle Xcel Energy Joseph Knight MAPPCOR			
John Horakh MAAC #2	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Darrell Richardson Illinois Power #1, 3	x		
David Thorne Pepco #1	x		
<u>Centerpoint Energy #1</u> Richard Sikes John Jonte Wayne Kemper Glenn Hemperley Brad Calhoun	x	x	We agree with removing redundancy, but not coordination.
<p>The SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p> <p>Coordination between RAs is being addressed in the Coordinate Operations Standard. During the development of the Coordinate Operations SAR, the consensus of the comments submitted indicated that the Coordinate Operations Standard should focus on RA to RA coordination. The SAR DT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses the coordination between an RA and its underlying functions – and to address the coordination between TOPs.</p>			
Michael Sidiropoulos Pacificorp		x	Page 3, paragraph 3 says: “Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages”. Considering the events leading to the recent blackout, this section may have to be revised. Suggestion: allow a system to exceed local operating limits only if a controlled islanding scheme is in place, which can be shown to prevent cascading for the operating condition in question.

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<p>While the results of the blackout investigation have not been published, it doesn't seem likely that the blackout was the result of exceeding an individual system operating limit. However, even before the August 14 blackout, there was concern that this standard may not have a broad enough scope and the SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p> <p>There is another standard called, "Design, Install, and Coordinate Control and Protection Systems" that addresses system protection.</p>			
John Blazekovich	Exelon Corp	#1, 3, 5, 6	<p>x</p> <p>Based on recent events of August 14, 2003 Exelon Corporation is not as confident as the SAR authors in stating, "Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages". We ask that this Standard be put on "hold" until investigations are completed and root cause has been established.</p> <p>Exelon Corporation feels that ultimately the reliability of the interconnection lies with the Reliability Authority, but Transmission Operators should not be eliminated from contributing/participating in actions that enhance reliability.</p>
<p>While the results of the blackout investigation have not been published, it doesn't seem likely that the blackout was the result of exceeding an individual system operating limit. However, even before the August 14 blackout, there was concern that this standard may not have a broad enough scope and the SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p>			
Southern Co Transmission Planning #1			<p>x</p> <p>It is not clear to us that the Transmission Operator would never be responsible for performing the requirements included in this standard. Similar to Standard 600, this requirement could apply to "the areas for which they are responsible".</p>
Todd Lucas	Southern Co		
Joe Payne	Mississippi Power Company		
Travis Koval	Southern Co		
Bill Pope	Gulf Power Company		
John Clark	Southern Co		
David Johnson	Savannah Electric		
Mike Miller	Southern Co		
Jim Griffith	Southern Co		
Monroe Landrum	Southern Co		
<p>The Functional Model is built on the assumption that there is one function with ultimate responsibility for each reliability-related activity, and the Functional Model assigns the RA the responsibility for establishing reliability limits. The RA can delegate this responsibility to TOPs, but even if the RA delegates this responsibility, the RA would be held responsible for compliance with the requirement. The SDT was also concerned about completely removing the requirements for the TOP, and sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p>			

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Ed Davis Entergy Services #1	x	<p>Given the significant changes to this draft standard, the RA is now monitoring the facilities with identified and documented IROLs. We do not agree with this blanket statement until we are able to review all the requirements of all the functional entities. For instance, this draft standard does not recognize that the TO has fiduciary responsibility to his stockholders' and lending institutions' investments and that neither NERC standards, nor the Functional Model, can take that responsibility and liability away. This fiduciary responsibility requires the TO establish thermal ratings, and associated Tv, for its equipment and then monitor that equipment. If those thermal ratings are the lesser of the thermal, stability or voltage limits, then the TO has established the IROL limit. Therefore, we suggest the requirements identified in this standard are not redundant requirements but are requirements met by several entities (functions), not met by one entity (function).</p> <p>Also, the requirements should be changed to the TO, from the TOP. The TO may delegate some parts of that function to another entity, at the TO's option. However, for the purposes of this standard, the Transmission Owner must be added to all parts of this standard.</p> <p>In addition, what functional entity is monitoring all the transmission facilities with system operating limits not included in the IROLs? What functional entity is monitoring all the other transmission facilities? The answer is that the TO, and maybe the TOP, must be added to the list of entities (functions) monitoring the real-time system to ensure all the transmission facilities are being operated within limits.</p> <p>If the TO is not added to this standard, then there is a major piece missing to the monitoring of the power system and the reliability of the system. That missing piece is the monitoring of the system operating limits.</p> <p>Therefore, another standard needs to be written with a title something like – "Operate Within Limits – All Transmission and System Operating Limits Other Than Interconnection Reliability Operating Limits".</p>
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<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard addresses the development of both facility ratings and system operating limits. This standard requires that the equipment owners establish facility ratings, and that the facility ratings be respected in the development of system operating limits.</p> <p>The Functional Model assigned responsibility for establishing facility ratings with equipment owners (Generator Owners and Transmission Owners) – and assigned the responsibility for establishing reliability limits to the RA and limits associated with local networks to the TOP.</p> <p>The Functional Model does not preclude the delegation of activities from the RA to other functions. However, the Functional Model is built on the assumption that there is one function with ultimate responsibility for each reliability-related activity, and the Functional Model assigns the RA the responsibility for establishing reliability limits. The RA can delegate this responsibility to TOPs, but even if the RA delegates this responsibility, the RA would be held responsible for compliance with the requirement. The SDT was also concerned about completely removing the requirements for the TOP, and sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p>			
Terry Bilke	Midwest ISO #2	x	<p>There should be some responsibilities for both RA (present day Reliability Coordinator) and the Transmission Operator. They aren't necessarily the same requirements.</p> <p>The TO-RA relationship is akin to the pilot-air traffic controller relationship. Both monitor some common items. In general, one view is local, the other is broader and at a higher level. Both have a responsibility for air safety.</p>
<p>None of the 'Set of 11 Standards' addresses the coordination that takes place between the RA and the TOP. The Coordinate Operations SAR DT sent a letter to the Director-Standards asking that the NERC Operating Committee be informed of this omission, and investigate the need for an additional SAR.</p>			

**Consideration of Comments on 2<sup>nd</sup> Posting of Operate Within Interconnection Reliability Operating Limits Standard  
Comments on Definitions**

<p>Southern Company Generation &amp; Energy Mktg  Roman Carter # 5, 6  Joel Dison #5,6  Tony Reed #5,6  Lucius Burris #5,6  David Deerman #5,6  Clifford Shepard #5,6  Michael Smith #5,6  Lloyd Barnes SCGEM 5,6  Gary Miller SCGEM 5,6  Terry Crawley Southern Generation 5  Roger Green Southern Generation 5</p>		x	<p>It would be appropriate to leave the requirements for the Transmission Operator in the Standard as long as it is better clarified that the Transmission Operator is responsible for the local network system and not duplicating the Reliability Authority’s responsibility for the overall Bulk electric system.</p> <p>Furthermore, the comment on page 3, third paragraph in the Comment Form, <u>“Exceeding a system operating limit associated with the local network integrity is important, but is not likely, by itself, to put the interconnection at risk of instability, uncontrolled separation or cascading outages”</u> may need to be reworded or possibly removed in light of the recent Blackout. Does Local Network Integrity need to be addressed in a Standard itself?</p>
<p>The scope of the SAR included the following language that seemed to preclude including limits associated with local networks. “This standard requires adherence to established operating limits<sup>3</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. “ Even before the August 14 blackout, the SDT was concerned about that the scope of the standard may not be comprehensive enough, and an additional SAR may be needed. The SDT sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p>			
<p>Susan Morris SERC #2  Bill Reinke SERC #2  Sam Stryker Fayettevill PWC #3, 4, 5  Carter Edge SEPA #4, 5  Bill Thompson Dominion Trans #1</p>		x	<p>This should not preclude the Transmission Operator(s) from conducting independent analysis.</p> <p>This draft standard does not recognize that the TO has fiduciary responsibility for its owned facilities and neither NERC standards, nor the Functional Model, can take that responsibility and liability away. This fiduciary responsibility requires the TO to establish thermal ratings, and associated Tv, for its equipment and then monitor that equipment. If those thermal ratings are the lesser of the thermal, stability or voltage limits, then the TO has established the IROL limit. Therefore, we suggest the requirements identified in this standard are not redundant requirements but are requirements met by several entities (functions), not met by one entity (function).</p> <p>It should also be acknowledged that entities such as the RA and the TO(s) may delegate their respective monitoring responsibilities to the TOP.</p>

<sup>3</sup> These are the limits established through the standard, “Determine Facility Ratings, Operating Limits and Transfer Capabilities”

**Consideration of Comments on 2<sup>nd</sup> Posting of Operate Within Interconnection Reliability Operating Limits Standard  
Comments on Definitions**

		<p>The following is an excerpt from page three of this document: <i>“This reliability standard focuses on the subset of system operating limits that, if exceeded, could cause instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system and is clearly under the responsibility of the Reliability Authority.”</i> For Tos/TOPs, system operating limits should not include only those limits which have been identified as leading to cascading outages, instability, or uncontrolled separation. This is a major issue in terms of the scope. As conceived, this standard does not result in any entity assuring that bulk power system is operating within limits. It only results in operating within those limits for which violations result in instability/cascading outage risk. Any defined operating limit, which has been identified as potentially threatening bulk reliability and thereby requiring consistent monitoring and adherence, should be covered by a standard.</p>
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard addresses the development of both facility ratings and system operating limits. This standard requires that the equipment owners establish facility ratings, and that the facility ratings be respected in the development of system operating limits.</p> <p>The Functional Model assigned responsibility for establishing facility ratings with equipment owners (Generator Owners and Transmission Owners) – and assigned the responsibility for establishing reliability limits to the RA and limits associated with local networks to the TOP.</p> <p>The Functional Model does not preclude the delegation of activities from the RA to other functions. However, the Functional Model is built on the assumption that there is one function with ultimate responsibility for each reliability-related activity, and the Functional Model assigns the RA the responsibility for establishing reliability limits. The RA can delegate this responsibility to TOPs, but even if the RA delegates this responsibility, the RA would be held responsible for compliance with the requirement. The SDT was also concerned about completely removing the requirements for the TOP, and sent a letter to the Director-Standards recommending that action be taken to review the need for a separate standard that addresses operating within system operating limits. In turn, the Director-Standards informed the NERC Operating Committee (OC) and asked that the OC initiate action to determine if an additional SAR is needed.</p>		

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard  
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**Notifying the Compliance Monitor – Include in standard or in a Compliance Enforcement Program (CEP) Document**

**Summary Consideration:** Most commenters indicated a preference for keeping this in the standard, so the references were kept in the revised standard.

Commenter	Std	CEP	Comments
Terry Bilke Midwest ISO #2	x		There does not appear to be a need to make submissions within 5 business days. It may take a while to sort out a problem.
The intent in selecting 5 business days was to select a timeframe that would be short enough so that entities wouldn't forget about the situation, yet long enough that entities could verify that they hadn't received the data.			
Susan Morris SERC #2 Bill Reinke SERC #2 Sam Stryker Fayettevill PWC #3, 4, 5 Carter Edge SEPA #4, 5 Bill Thompson Dominion Trans #1	x		We believe that it is appropriate to include this in the standard with the comments noted in Section 205. <i>(The requirement for data collection should be tied to its impact on reliability. Requirement 1.3 should be modified to read:</i>  <i>The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority does not provide data as specified and this lack of data has an impact on reliability.</i>  <i>Measurement 2.3.1 should be rewritten to read:</i>  <i>2.3.1. The notification shall take place within five business days of discovering that the data having an impact on reliability is missing.)</i>
The suggested change to Requirement 205 was not adopted because it would link data collection with an instance of exceeding an IROL, and that could result in a multiple sanctions for the same violation. The standards are being drafted so that there will only be a single sanction for a single violation.			
<u>FRCC Op, Eng &amp; Mkt Int</u> Linda Campbell FRCC #2 Paul Elwing Lakeland Electric #3 John Shaffer FPL #1 Bob Remley Clay Elec Coop #4 Patti Metro FRCC #2 Eirc Grant Progress Energy – FL #1 Joe Roos Ocala Electric Utility #3 Joe Krupar FL Muni Pwr Agency #3 Richard Gilbert Lakeland Electric #3	x		We agree with including it in the standard because there needs to be some place for recognition of not getting the data that is needed. We are not entirely sure what steps the compliance monitor would then take, but are assuming the compliance monitor would follow up with the entity not supplying the needed information. In FRCC, if our Security Coordinator does not get the requested information, our Operating Reliability Subcommittee is informed so that follow up can take place. Ultimately, our Security Process (Reliability Plan) requires the operating entities to supply required reliability data and our ORS and OC are the back stop to ensure it is supplied.



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<p>Bill Slater Progress Energy – FL #1 Amy Long Lakeland Electric #1 Roger Westphal Gainesville Regional Util #5 Bob Goss SEPA #5 Steve Wallace Seminore Electric Coop #4 Ted Hobson JEA #1</p>			
<p><b>Notification of the Compliance Monitor is supposed to be the 'trigger' for an 'investigation upon complaint'.</b></p>			
<p><u>Operating Reliability Working Group SPP</u> Gerry Burrows KCP&amp;L #1 Bob Cochran SPS #1 Peter Kuebeck OG&amp;E #1 Scott Moore AEP #1 Tom Stuchlik Westar #1 Dan Boezio AEP #1 Matt Bordelon CLECO #1 Mike Crouch WFEC #1 Mike Gammon KCP&amp;L #1 Kevin Goolsby SPP #2 Bo Jones Westar #1 Allen Klassen Westar #1 Thad Ness AEP #1 Harold Wyble KCP&amp;L #1 Robert Rhodes SPP #2</p>	<p>x</p>		<p>This standard does not require the reliability authority to notify those entities not providing data to remind those entities that they should be providing data. The reliability authority should be trying to obtain the missing data and working to resolve differences that prevent delivery of the data. If the reliability authority and the responding entity cannot reach agreement on data delivery, then the reliability authority should notify the compliance monitor.</p>
<p><b>Agreed – this standard does not require the RA to provide a reminder to those entities that need to provide data. This does not preclude the RA from providing such a reminder.</b></p>			
<p><u>MAAP Ops Subcommittee #2</u> Llyod Linke MAPP Allan Silk Manitoba Hydro Paul Brune NPPD Tod Gosnell Omaha Public Pwr Dist Paul Koskela Minnesota Pwr Larry Larson Otter Tail Power Derrick Moe WAPA Dick Pursley Great River Energy</p>	<p>x</p>		<p>Relaying on a centralized compliance document would result in a compliance document that could never be stabilized due to too many changes being required.</p>

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Martin Trencce Xcel Energy Joseph Knight MAPPCOR			
The CEP is likely to undergo some changes as a result of the new committee structure – and one of those changes may be increased standardization in the implementation of the Regional Compliance Programs. If this happens, this procedure could be revised so that the same requirement doesn't appear in multiple documents.			
Stuart Goza TVA #1	x		
<u>NPCC CP9</u> Michael Schiavone National Grid USA #1 Roger Champagne Hydro-Quebec TransEnergie #1 Ralph Rufrano New York Power Authority #1 David Little Nova Scotia Power Inc. #1 David Kiguel Hydro One Networks #1 Michael Potishnak ISO-New England #2 Barry Gee National Grid USA #1 Dan Stosick ISO-New England #2 Fernando Saavedra ISO-New England #2 Greg Campoli New York ISO #2	x		
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	x		
Kathleen Goodman ISO-NE #2	x		
Peter Burke ATC #1	x		
Alan Boesch NPPD #1	x		
Carter Edge SEPA #4, 5	x		
Tony Jankowski We Energies #4	x		
Michael Sidiropoulos Pacificorp	x		
<u>BPA Adm TBL #1</u> James Murphy Mike Viles James Randall Al Johnson Jeff Newby Jim Gronquist Sylvia Wiggerhaus Brian Tuck Dick Spence Tracy Rolstad Steve Hitchens	x		
Ed Davis Entergy Services #1	x		
Alan Johnson Mirant Americas Energy Mktg #6	x		
<u>SERC Operations Planning Subcommittee</u> Carter Edge SEPA #4, 5	x		

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William Gaither So Carolina Pub Serv Auth #1 Mike Miller Southern Co #1 Roger Brand Muni Elec Auth GA #1 Phil Creech Progress Energy – CP&L #1 Gene Delk So Carolina Elec & Gas #1 Al McMeekin So Carolina Elec & Gas #1 Greg Ott Alcoa-Yadkin #1 Doug Newbaue GA System Operations #1 Mike Clements TVA #1 Don Reichenbach Duke Energy #1 Lynna Estep SERC #2 Mark Creech TVA #1			
Dan Boezio & Raj Rana AEP #1, 3, 5, 6		x	We would encourage the Reliability Authority to work with the entities not providing the specified data and try to resolve the dispute prior to reporting the issue to the Compliance Monitor. Additionally, we believe the requirement for the Reliability Authority to notify the Compliance Monitor does not need to be contained within this standard.
<b>The standard was revised to include the provision that the RA only notify its compliance monitor if it is unable to resolve an issue involving data not being provided as specified.</b>			
William Smith Allegheny Power #1		x	
Raymond Mammarella PPL Elec Util #1		x	
Tom Pruitt Duke Power #1		x	
Ken Githens Allegheny Energy Supply #5		x	
James Horakh MAAC #2		x	
Darrell Richardson Illinois Power #1, 3		x	
Robert Grover PPL Elec Util #3		x	
<u>Southern Co Transmission Planning #1</u> Todd Lucas Southern Co Joe Payne Mississippi Power Company Travis Koval Southern Co Bill Pope Gulf Power Company John Clark Southern Co David Johnson Savannah Electric Mike Miller Southern Co Jim Griffith Southern Co		x	

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Monroe Landrum Southern Co			
David Thorne Pepco #1		x	
Albert DiCaprio MAAC #2		x	
Mark Heimbach PPL Generation #6		x	
<u>Trans Subcommittee</u>		x	
Robert E. Reed PJM			
Daniel Cooper Michigan Public Power Agency			
Ken Donohoo ERCOT			
Michael Gildea Duke-Energy, North America			
Francis Halpin Bonneville Power Administration			
Tom Mallinger Midwest ISO			
Darrick Moe Western Area Power Adm			
Scott Moore American Electric Power			
Bill Slater Florida Power Corporation			
Tom Stuchlik Western Resources			
Joseph Styslinger Southern Company			
David Thorne D. H. Thorne Consultants, Inc			
Robert Waldele New York ISO			
Roman Carter Southern Company			
John Ahr Alleghany Power Systems			
Susan Morris SERC			
Ed Pfeiffer Ameren			
Ray Palmieri ECAR			
Tom Vandervort NERC			

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<u>Southern Company Generation &amp; Energy Mktg</u> Roman Carter # 5, 6 Joel Dison #5,6 Tony Reed #5,6 Lucius Burris #5,6 David Deerman #5,6 Clifford Shepard #5,6 Michael Smith #5,6 Lloyd Barnes SCGEM 5,6 Gary Miller SCGEM 5,6 Terry Crawley Southern Generation 5 Roger Green Southern Generation 5		x	
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**Other Comments**

Commenter	Comments
Terry Bilke Midwest ISO #2	In general, the level of compliance violation should be proportional to its impact on reliability (not the size of the entity).
<b>Agreed. The new compliance committees intend to address that issue.</b>	
Ron Falsetti IMO #2	A further concern with the draft is the continuing difficulty of defining wide area impact versus local impact. There is no guidance on how the parameters are to be defined which would permit the identification of the local area and the widespread area. It also fails to recognize that a local area problem may evolve into a wider area problem depending on the load, time of day, recent contingencies and other factors. A well defined process for determining what is (and what is not) a reportable event is essential.
<b>A definition for Wide Area Impact has been developed.</b>	
Stuart Goza TVA #1	Please note that throughout the standard the Tv term is used but is not formatted the same (Tv vs. T <sub>v</sub> ). This is a minor, formatting issue, but should be consistent throughout to reduce confusion.
<b>Agreed. We will try to do a better job of proofing before posting.</b>	
<u>Compliance Subcommittee</u>	<p>The document has been written in a manner that meets many of the concerns we had with the first draft.</p> <p>The key compliance issues that should be measures are captured in 202, 203 and 204. (The other measures, identifying the elements, data collection, data provision, action plan, and RA Directives are important as supporting requirements but do not require a compliance structure. Suggest that the certification process should spell out the policies, procedures and processes, reporting relationships and data collection requirements.)</p> <p>There are some concerns with the Compliance levels, and the CS and CRS will discuss that in Charleston, September 8 and 9.</p>
<b>Most of the processes, procedures and tools needed to support this standard are included in the RA Certification SAR and should not be duplicated in this standard.</b>	
<b>The standards development process requires that comments be submitted during the open posting periods. Comments submitted after the public posting periods are inappropriate and are outside this process.</b>	
Kathleen Goodman ISO-NE #2  <u>NPCC CP9</u> Michael Schiavone National Grid USA #1	1. NPCC (ISO-NE) is adamantly opposed to monetary sanctions and feels letters of increasing severity are a more effective compliance tool for ensuring adherence to standards.

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<p>Roger Champagne Hydro-Quebec TransEnergie #1  Ralph Rufrano New York Power Authority #1  David Little Nova Scotia Power Inc. #1  David Kiguel Hydro One Networks #1  Michael Potishnak ISO-New England #2  Barry Gee National Grid USA #1  Dan Stosick ISO-New England #2  Fernando Saavedra ISO-New England #2  Greg Campoli New York ISO #2</p>	<ol style="list-style-type: none"> <li>2. NPCC (ISO-NE) also feels there is a lack of coordination between the standard drafting teams and has noted instances where one team felt an issue was addressed in a separate standard to later learn it was not. As an example, with respect to the Balancing Resources standard, transmission overloads that are caused by poor control are not covered by this standard unless they reach a high level IROL. It later was identified that where this was thought to have been covered, the Operate Within Limits Standard, it was not. We would suggest that there be technical oversight as we go forward with these processes to ensure there are no “gaps” or critical reliability issues that are not addressed in the resultant standards.</li>   <li>3. Establishment of the IROL should be done in the Facility Rating Standard because that is the standard that establishes Operating Limits otherwise the wording of the title should be changed to Establish IROL and Operate within Limits.</li>   <li>4. From a global perspective it might be a prudent action to place the NERC RS development in a moratorium until the investigation into the blackout cause is completed and determinations have been made. There could be new Reliability issues that need to be captured in the developing RS that need to be incorporated into the upcoming draft RS.</li>   <li>5. NPCC (ISO-NE) seeks explanation for drawing the line at addressing only instability, cascading outages and separation. For example, what standard, if any, will address the scenario where an entity operates their system to cause a sizable thermal overload on a transmission line in another entity’s system. (e.g. a transmission line burns down if the affected entity does not take corrective action)</li> </ol>
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1. Developing and modifying the sanctions table is outside the scope of the SDT.
2. Because these standards are being developed in parallel, and because each standard's development is guided by industry comments, it is not possible to 'guarantee' that the standards will not have 'gaps' that may need to be addressed through the submission of additional SARs to add or revise requirements. An oversight committee would not be able to 'add' any requirements to the standards – all work must be done in an open process. Where the SDTs identify gaps, they notify the Director-Standards, and the Director-Standards notifies the appropriate NERC committee. The Director-Standards has already sent notices to the Resources Subcommittee and the Operating Committee regarding possible gaps in the proposed standards.
3. IROLs are a subset of system operating limits and must be developed according to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard. Either standard could have addressed the development of IROLs, and as long as the compliance elements are only in one standard, no harm is done by including the identification of the IROLs in this standard.
4. The standards being developed can be revised, if needed. Unless the BOT notifies the SAC and the Director-Standards that they should curtail work on these standards, development will move forward.
5. The SAR's purpose defined the scope of this standard. The SDT sent a letter to the Director-Standards asking that consideration be given to the development of another SAR that addresses other system operating limits. The Director-Standards sent the request to the Operating Committee for its action.

Southern Co Transmission Planning #1

Todd Lucas     Southern Co  
 Joe Payne     Mississippi Power Company  
 Travis Koval   Southern Co  
 Bill Pope     Gulf Power Company  
 John Clark     Southern Co  
 David Johnson   Savannah Electric  
 Mike Miller     Southern Co  
 Jim Griffith     Southern Co  
 Monroe Landrum     Southern Co

This standard should not be brought to ballot until the Planning Authority is defined in the Functional Model since the Planning Authority is assigned requirements in this standard.

The standard was revised and there aren't any requirements assigned to the Planning Authority.

Richard Sikes   CenterPoint Energy #1

We are not convinced of the need for changing from Operations Security Limit and whether there was sufficient thought given to the implications of this change. There is some thought that a mention of coordination between the Reliability Authority and Transmission Operator is redundancy. We do not agree with this concept, but we do agree with removing redundancy. We believe that any action plans regarding the mitigation of events should be a coordinated effort between the Reliability Authority and Transmission Operator.



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Here is the history on the new term IROL: The Board of Trustees asked the Director-Compliance to investigate the reason(s) why there appeared to be an increase in the number of OSL violations. The investigation showed that there was no common understanding of what constituted an OSL violation. The OLDTF formed to conduct this investigation concluded that developing a new term with a more understandable definition would minimize confusion and may lead to greater consistency in reporting OSL-type violations. The OLDTF asked the SDT to adopt as much of their work as possible, including the new term. The SDT modified the OLDTF's term to clarify that these limits are not the same as the frequency limits being proposed by the Balance Resources and Demand SDT. Hence the change from IRL to IROL.

Coordination between the RA and the TOP was never a topic included in this standard – it was proposed for inclusion in another standard, similar to the draft standard under development called, "Coordinate Operations". The Coordinate Operations standard is focused on the coordination that takes place between RAs – and doesn't address the coordination that needs to take place between an RA and its supporting functions – and the Coordinate Operations Standard doesn't address the coordination that takes place between TOPs. The Coordinate Operations SAR DT sent a letter to the Director-Standards asking that these 'gaps' be addressed – and the Director-Standards informed the Operating Committee so that it can take action to investigate and submit SAR(s).

This standard does include the following specific language: "The plan shall identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions. "

Susan Morris SERC #2  
 Bill Reinke SERC #2  
 Sam Stryker Fayettevill PWC #3, 4, 5  
 Carter Edge SEPA #4, 5  
 Bill Thompson Dominion Trans #1

1. Please note that throughout the standard the Tv term is used but is not formatted the same (Tv vs. T<sub>v</sub>). This is a minor, formatting issue, but should be consistent throughout to reduce confusion.
2. Two definitions should be changed based on our comments:
  - Reliability Authority Area: A defined electrical system bounded by interconnection (tie -line) metering and telemetry **monitored by** a single reliability authority.
  - Tv: The violation time associated with a limit that is determined by the Transmission Owner(s) for equipment-based limits and by the Reliability Authority and the Planning Authority(ies) for system-based limits.
3. We are becoming increasingly concerned about this standard development process. This and other standards are being developed based on certain definitions and assumptions contained in the Functional Model. These "standards" will become fixed such that the industry will be held accountable to and measured by these standards. However, the Functional Model and the definitions contained in that revised model are changing and will not necessarily be the same as those used to develop the standards. What is the process for reviewing, revising and implementing changes to the Functional Model, and the impact of those changes on all these standards that have been developed based on the old Functional Model? Are the changes to the Functional Model being vetted by all industry participants before implementation? What is the process to revise these standards prior to

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	implementing changes to the Functional Model?
<ol style="list-style-type: none"> <li>1. Agreed. We will try to do a better job of proofing before posting.</li> <li>2. The Reliability Authority Area definition was modified to reflect the intent of your suggestion, but the word, "direct" was used rather than monitor.</li> <li>3. The change to Tv was not made, because this does not conform with the delineation between facility limits and system operating limits established in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard (DFR Standard). In the DFR standard, the facility owners establish facility ratings, and provide these ratings to the RA, TOP and PA. The RA, TOP and PA have responsibility for establishing System Operating Limits that respect the Facility Ratings already established. While a facility rating may have a time component associated with it, this is not the same time component used by the RA when a system operating limit is labeled an IROL. The Tv associated with the IROL must respect the time component established by the facility owner, but the Tv may be shorter than the time component associated with the facility rating.</li> <li>4. Addressing comments about the need to clarify the Functional Model are beyond the scope of the SDT. You are encouraged to bring your concerns to the attention of the Functional Model Review Task Group.</li> </ol>	
Gerald Rheault Manitoba Hydro #1, 3, 5, 6	A NERC standard is a form of legal document – it spells out the standards, the measurements, the levels of compliance and the penalties for non-compliance. As such, there should be no ambiguity, so any term defined by NERC should be clearly identified in the standard (capitalized, bold, etc.) where it is used as a defined term, or NERC must certify that all uses of a defined word are a reference to the defined term.
<p>NERC's Vice President and Legal Counsel is responsible for making the final decision on the format of these new standards, and initially he did not support the practice of capitalizing defined terms. Over the past several months there have been so many comments submitted on SARs and draft Standards requesting that defined terms be capitalized, that this practice of capitalizing defined terms is being supported. In the revised standard, defined terms have been capitalized.</p>	
<p><u>FRCC Op, Eng &amp; Mkt Int</u>  Linda Campbell FRCC #2  Paul Elwing Lakeland Electric # 3  John Shaffer FPL #1  Bob Remley Clay Elec Coop #4  Patti Metro FRCC #2  Eirc Grant Progress Energy – FL #1  Joe Roos Ocala Electric Utility #3  Joe Krupar FL Muni Pwr Agency #3  Richard Gilbert Lakeland Electric #3  Bill Slater Progress Energy – FL #1  Amy Long Lakeland Electric #1  Roger Westphal Gainesville Regional Util #5</p>	<ol style="list-style-type: none"> <li>1. On the first page, the SDT has identified an "Effective Period". By using the term period, it implies that there will be an end time when the standard will no longer apply. Would it be more appropriate to just state an effective date?</li> <li>2. In the applicability paragraph, the SDT has referenced the functional model approved by the BOT in June 2001. This reference causes concern. We understand that including this reference and date identifies the version of the functional model so that the understanding of the functions are based on this particular document. But, what happens when the BOT approves a change to the model at a later date? Do we now have standards based on one set of functions or understanding of functions that are different than what is in the latest functional model? This will certainly cause confusion in the industry. But, on the other hand, if you remove the date reference, then anytime the BOT changes the model, they are effectively changing the standard without going through the SAR process. We do not want the BOT to be able to change who the standards apply to without going through due process either. How do we deal with this situation?</li> </ol>

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<p>Bob Goss SEPA #5          Steve Wallace Seminore Electric Coop #4          Ted Hobson JEA #1</p>	<p>3. In the comment box on this first page, the SDT has stated that the terms BA, RA etc really apply to the entities performing the functions identified in the functional model. We understand and appreciate why the team did this, however, there is still a lot of confusion about functions vs entities in the functional model. We would suggest that the standard include the extra words to make this distinction. For example, in 1.1 of standard 201, it should read "The entities performing the reliability authority and planning authority functions shall.." This seems trivial, but we believe it is very important in helping the industry understand the functional model and how the standards apply to the entities performing the functions.</p> <p>4. Just a note for future comment forms, please provide a comment box after every question, not just at the end of the section on a particular standard. That way the comments and yes/no answers could be kept together.</p>
<p>1. Effective Date is a more appropriate phrase and has been adopted.</p> <p>2. The need for more clearly defined reliability standards is at the forefront of the push to develop new standards. There were many complaints about the lack of objectivity in the measures associated with the existing Operating Policies. If we were to wait until the Functional Model were approved before developing any new standards, we would not be achieving our goal of developing objective standards to support reliability as quickly as possible. If the Functional Model is changed and requires changes to already approved standards, then we will need to revise the standards.</p> <p>3. Phrases such as, 'the reliability authority' are being used because these are much shorter and therefore easier to read than the longer phrase, the entity performing the reliability authority function. We agree that the longer phrase is more accurate and if the Functional Model had been introduced using the longer phrases then we would also use the longer phrases. However, when the Functional Model was introduced to the industry, the shortcut phrases such as , 'the reliability authority' were used. Here is a sample sentence from page 33 of the approved version of the Functional Model: "The Purchasing-Selling Entity contacts the Generator and arranges for an energy purchase and contacts the Load-Serving Entity for the sale." If the longer version were used, this is how the same sentence would read: The entity performing the purchasing-selling entity function contacts the entity performing the generator function and arranges for an energy purchase and contacts the entity performing the load-serving entity for the sale.</p> <p>4. We've tried to experiment with different comment forms. In the past, several commenters inserted the same comment in every comment box for all comments related to a requirement. By having a single comment box for a requirement, the goal was to eliminate the need to duplicate comments.</p>	
<p>Alan Boesch NPPD #1</p>	<p>Not all System operating limits are being addressed in this standard. System operating limits in one area can be caused by the failure of another BA to balance generation and load. The RA will be getting the ACE values and should be responsible for assuring that imbalance situation does not cause a problem on the system. This situation is not addressed in the Balance Resource and Demand Standard because it allows unlimited imbalance if it is the opposite direction of frequency error. This situation needs to be addressed in a standard.</p>

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**Other Questions**

<p>This standard does not address all system operating limits. The SAR DT sent a letter to the Director-Standards asking that additional attention be paid to this omission. The Operating Committee has been informed of this 'gap' in the standards, and has been encouraged to review the situation and submit a SAR if needed.</p>	
<p>Dan Boezio &amp; Raj Rana AEP #1, 3, 5, 6</p>	<p>In each of these Standards the 'tie-in' to the Sanctions Matrix is insufficient and unclear. For example if an entity is first occurrence, level 4 non compliant to Standard 206. The penalty is a Letter (B) and \$2000 OR \$2 per MW. Which penalty is being applied the fix or variable? If it is variable, what MW is the penalty based on? The RA's load, generator rating, something else?</p> <p>We request the SDT review the levels of non-compliance and take into account the timeliness of actions or data submitted, the completeness of actions or data submitted and the quality of actions or data submitted. We believe that some of the requirements, when properly measured will lend themselves to having additional levels of non-compliance, for the ramifications of non-compliance for some of the requirements is not so severe to actually have an adverse impact on the bulk transmission system.</p>
<p>The links to the sanctions table have been added. All infractions use the letters and flat dollar fines except for a level four non-compliance for requirement 204 – exceeding an IROL for time greater than T<sub>v</sub>. For this particular violation, the following language was added: Level four non-compliance sanctions shall be the greater of the fixed dollar sanctions listed in the matrix, or the number of Megawatts above the IROL multiplied by the dollar value for the number of times non-compliant.</p> <p>In developing the levels of non-compliance, the SDT tried to consider the actual or possible impact to reliability as well as the feasibility of measurement. Many things that would be 'good' to measure such as 'quality', are nearly impossible to measure objectively.</p>	
<p>Tony Jankowski We Energies #4</p>	<p>Please provide assessment of how this Standard will work with abnormal operations and emergency restoration. How is the line drawn. Use the August 14, 2003 event as an example for determining compliance and sanctions.</p>
<p>This standard does not address abnormal conditions or emergency restoration. Those topics are being addressed in other standards, and adding links between the standards is beyond the scope of the SDT.</p>	

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard**  
**Other Questions**

<p><u>Operating Reliability Working Group SPP</u>  Gerry Burrows KCP&amp;L #1  Bob Cochran SPS #1  Peter Kuebeck OG&amp;E #1  Scott Moore AEP #1  Tom Stuchlik Westar #1  Dan Boezio AEP #1  Matt Bordelon CLECO #1  Mike Crouch WFEC #1  Mike Gammon KCP&amp;L #1  Kevin Goolsby SPP #2  Bo Jones Westar #1  Allen Klassen Westar #1  Thad Ness AEP #1  Harold Wyble KCP&amp;L #1  Robert Rhodes SPP #2</p>	<p>The performance reset period of one calendar year in 201, 202, 204 and 205 should be changed to 12 months. 206, 270 and 208 should remain 12 months.</p> <p>Areas where non-compliance is the result of a lack of proper documentation should be consistent throughout each individual standard and across all standards, especially between this standard and Standard 600, Determine Facility Ratings, System Operating Limits and Transfer Capabilities.</p>
<p>There were several commenters who suggested changes to the reset period, and the standard was revised so that all requirements in this standard have the following language: "12 months from the last violation" This change supports your recommendation.</p> <p>Changes in standards are driven by the comments submitted by the industry. A lack of proper documentation in one standard is not necessarily the same as in another standard.</p>	
<p><u>MAAP Ops Subcommittee #2</u>  Llyod Linke MAPP  Allan Silk Manitoba Hydro  Paul Brune NPPD  Tod Gosnell Omaha Public Pwr Dist  Paul Koskela Minnesota Pwr  Larry Larson Otter Tail Power  Derrick Moe WAPA  Dick Pursley Great River Energy  Martin Trencce Xcel Energy  Joseph Knight MAPPCOR</p>	<p>The Sanctions Subsection (number 6) for each heading should define the MW value to be used when determining monetary penalties if an entity is found to be non-compliant, or clarify that the fixed level sanctions should be used and not the per-MW sanctions.</p> <p>Is there a reason why NERC defined terms are not capitalized throughout the standard?</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard**  
**Other Questions**

The links to the sanctions table have been added. All infractions use the letters and flat dollar fines except for a level four non-compliance for requirement 204 – exceeding an IROL for time greater than T<sub>v</sub>. For this particular violation, the following language was added: Level four non-compliance sanctions shall be the greater of the fixed dollar sanctions listed in the matrix, or the number of Megawatts above the IROL multiplied by the dollar value for the number of times non-compliant.

NERC's Vice President and Legal Counsel is responsible for making the final decision on the format of these new standards, and initially he did not support the practice of capitalizing defined terms. Over the past several months there have been so many comments submitted on SARs and draft Standards requesting that defined terms be capitalized, that this practice of capitalizing defined terms is being supported. In the revised standard, defined terms have been capitalized.

BPA Adm TBL #1

James Murphy      Mike Viles  
 James Randall      Al Johnson  
 Jeff Newby          Jim Gronquist  
 Sylvia Wiggerhaus   Brian Tuck  
 Dick Spence        Tracy Rolstad  
 Steve Hitchens

In the Northwest, where there isn't a RTO in place, there seems to be some confusion on what current entity would be the RA? Who makes the decision or assigns who is the RA? We have also heard that a RA can direct TOP or others to do operational planning analysis, but we have not been able to find it in the Functional Model or this document. If that is the intent then it should be included in the Functional Model or this document. If you could direct us in these matters it would greatly improve our understanding of the document. Thank you for your help.

Each entity must decide what function(s) it wants to perform. That entity will need to 'register' with NERC and then for entities that want to perform the RA, BA, IA or TOP functions, the entity must obtain certification to perform that function. If this standard is approved and is implemented prior to RA Certification, each control area would be responsible for compliance with this standard.

When the Functional Model was presented to the industry, presenters verbally indicated that an entity may delegate some of its responsibilities. This does not appear in the text of the Functional Model, and is not included in the SARs for certification, and is not included in the text of this standard. In the explanatory information drafted to accompany the latest draft of proposed changes to the Functional Model, this issue is addressed. You are encouraged to bring your concerns to the attention of the Functional Model Review Task Group.

Ed Davis    Entergy Services    #1

1. Two definitions should be changed based on our comments:
  - Reliability Authority Area: A defined electrical system bounded by interconnection (tie -line) metering and telemetry monitored by a single reliability authority.
  - T<sub>v</sub>: The violation time associated with a limit that is determined by the Transmission Owner for equipment-based limits and by the Reliability Authority and the Planning Authority for system-based limits.
2. We are becoming increasingly concerned about this standard development process. This and other standards are being developed based on certain definitions and assumptions contained in the Function Model. These "standards" will become fixed such that the industry will be held accountable to and measured by these standards. However, the Functional Model and the definitions contained in that

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard**  
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	<p>revised model are changing and will not necessarily be the same as those used to develop the standards, like this Operate Within Limits. What is the process for reviewing, revising and implementing changes to the Functional Model, and the impact of those changes on all these standards that have been developed based on the old Functional Model? Are the changes to the Functional Model being vetted by all industry participants before implementation? What is the process to revise these standards prior to implementing changes to the Functional Model?</p>
<p><b>The Reliability Authority Area definition was modified to reflect the intent of your suggestion, but the word, “direct” was used rather than monitor.</b></p> <p>The change to Tv was not made, because this does not conform with the delineation between facility limits and system operating limits established in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard (DFR Standard). In the DFR standard, the facility owners establish facility ratings, and provide these ratings to the RA, TOP and PA. The RA, TOP and PA have responsibility for establishing System Operating Limits that respect the Facility Ratings already established. While a facility rating may have a time component associated with it, this is not the same time component used by the RA when a system operating limit is labeled an IROL. The T<sub>v</sub> associated with the IROL must respect the time component established by the facility owner, but the Tv may be shorter than the time component associated with the facility rating.</p> <p><b>Your comments about the Functional Model address concerns that are outside the scope of the SDT. You are encouraged to bring your concerns to the attention of the Functional Model Review Task Group.</b></p>	
<p>Stuart Goza TVA #1  <u>SERC Operations Planning Subcommittee</u>  Carter Edge SEPA #4, 5  William Gaither So Carolina Pub Serv Auth #1  Mike Miller Southern Co #1  Roger Brand Muni Elec Auth GA #1  Phil Creech Progress Energy – CP&amp;L #1  Gene Delk So Carolina Elec &amp; Gas #1  Al McMeekin So Carolina Elec &amp; Gas #1  Greg Ott Alcoa-Yadkin #1  Doug Newbaue GA System Operations #1  Mike Clements TVA #1  Don Reichenbach Duke Energy #1  Lynna Estep SERC #2  Mark Creech TVA #1</p>	<p>Please note that throughout the standard the Tv term is used but is not formatted the same (Tv vs. T<sub>v</sub>). This is a minor, formatting issue, but should be consistent throughout to reduce confusion.</p>
<p><b>Agreed. We will try to do a better job of proofing future drafts before posting.</b></p>	
<p><u>Trans Subcommittee</u></p>	<p>The TS recommends identifying the terms used in the standards that are found in the</p>

**Draft Comments and Considerations for 2<sup>nd</sup> Posting for Operate Within IROLs Standard  
Other Questions**

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<p>Robert E. Reed PJM Daniel Cooper Michigan Public Power Agency Ken Donohoo ERCOT Michael Gildea Duke-Energy, North America Francis Halpin Bonneville Power Administration Tom Mallinger Midwest ISO Darrick Moe Western Area Power Adm Scott Moore American Electric Power Bill Slater Florida Power Corporation Tom Stuchlik Western Resources Joseph Styslinger Southern Company David Thorne D. H. Thorne Consultants, Inc Robert Waldele New York ISO Roman Carter Southern Company John Ahr Alleghany Power Systems Susan Morris SERC Ed Pfeiffer Ameren Ray Palmieri ECAR Tom Vandervort NERC</p>	<p>new Standards Process “Glossary of Terms” repository. The TS suggests small capital letters, highlighted letters, bold letters, italicized letters or other method of making the defined words, terms and acronyms stand out.</p>
<p>NERC’s Vice President and Legal Counsel is responsible for making the final decision on the format of these new standards, and initially he did not support the practice of capitalizing defined terms. Over the past several months there have been so many comments submitted on SARs and draft Standards requesting that defined terms be capitalized, that this practice of capitalizing defined terms is being supported. In the revised standard, defined terms have been capitalized.</p>	



## Questions & Answers About the Operate within Operate within IROLs Standard

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## Questions & Answers About the Operate within Operate within IROLs Standard

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### Introduction to Standard

This standard requires adherence to the subset of system operating limits<sup>1</sup> identified to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system. These limits are called interconnection reliability operating limits and are under the authority of the entity performing the reliability authority function. (Note that there are many other system operating limits that are used by system operators working for entities performing the Reliability Authority function and for entities performing the Transmission Operator function. This standard only addresses Interconnection Reliability Operating Limits.)

This standard is aimed at preventing instances of exceeding IROLs – and for those rare occasions when an IROL may be exceeded, the standard is aimed at minimizing the impact of such an event.

The standard is subdivided into eight requirements. Each of the requirements addresses some aspect of monitoring or controlling the transmission system to operate within IROLs. Some of these requirements address underlying responsibilities that must be accomplished as a prerequisite to monitoring and controlling the transmission system relative to IROLs.

201 Interconnection Reliability Operating Limit Identification – requires identification of the facilities that are subject to IROLs, and requires RAs to be able to identify current IROLs. Each IROL must have a  $T_v$  and the  $T_v$  may not be greater than 30 minutes. The list of facilities subject to IROLs must be updated to reflect changes in topology and system conditions. Entities that share a facility must have an agreed upon process for determining whether that facility is subject to an IROL and for developing the IROL and its  $T_v$ . (The entity performing the Reliability Authority Function is responsible for this requirement.)

202 Monitoring – requires monitoring real time data and comparing the data to IROLs to determine if the RA Area is operating within its IROLs (The entity performing the Reliability Authority Function is responsible for this requirement.)

203 Analyses and Assessments – requires that an operational planning analyses be conducted at least once each day to look at the ‘day ahead’ and requires that real-time assessments be conducted at least once every 30 minutes. These analyses and assessments are done to see if the transmission system is expected to be operated within its IROLs and to see if the transmission system is operating within its IROLs. (The entity performing the Reliability Authority Function is responsible for this requirement.)

204 Actions – requires that actions be taken or directives issued to prevent or mitigate instances of exceeding IROLs. These actions and directives must be documented when an IROL is exceeded, and when an IROL is exceeded for a time greater than the IROL’s  $T_v$ , this event must be reported to the Compliance Monitor. The entity that issues a directive relative to an IROL must include a statement in the directive to clarify that the directive is related to an IROL. (The entity performing the Reliability Authority Function is responsible for this requirement.)

205 Data Specification & Collection – requires that a data specification be developed that identifies the data needed for monitoring real-time parameters against IROLs, and for conducting operational planning analyses and real-time assessments relative to operating within its reliability area’s IROLs. The Data Specification must be distributed to entities that are expected to provide data and needs to address what data to provide, a mutually agreeable format for the data, a timeframe and periodicity for providing data, and must address the data provision process to use when automated real-time system operating data is unavailable. The Reliability Authority must notify its Compliance

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<sup>1</sup> System Operating Limits are established through the standard, “Determine Facility Ratings, Operating Limits and Transfer Capabilities”

## **Questions & Answers About the Operate within Operate within IROLs Standard**

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Monitor if data is not provided as specified. (The entity performing the Reliability Authority Function is responsible for this requirement.)

206 Data Provision – requires that entities provide the Reliability Authority with data needed to monitor real-time parameters against IROLs, and to conduct operational planning analyses and real-time assessments relative to operating within its reliability area's IROLs. (The entities performing the following Functions are responsible for this requirement: Balancing Authorities, Generator Operators, Generator Owners, Load-serving Entities, Reliability Authorities, Transmission Operators, and Transmission Owners)

207 Processes, Procedures or Plans – requires that there be one or more processes, procedures or plans to address actions to take or directions to issue to prevent and mitigate instances of exceeding IROLs. The processes, procedures or plans must identify and be coordinated with all entities that have to take actions as part of the plan, and with entities that would be impacted by the actions taken in the plan. (The entity performing the Reliability Authority Function is responsible for this requirement.)

208 Reliability Authority Directives – requires that entities follow the Reliability Authority's directives issued to prevent or mitigate instances of exceeding IROLs. The directives issued and the actions taken in response to those directives must be documented. (The entities performing the following functions are responsible for this requirement: Balancing Authority, Interchange Authority, and Transmission Operator.)

### Expansion on Definitions

**Balancing Authority:** Integrates resource plans ahead of time, and maintains load-interchange-generation balance within its metered boundary and supports system frequency in real time.

*(Note – this term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.)*

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

*(Note – the original definition of this term was ‘circular’ and did not reference any voltage class. The definition was changed to include the reference to a measurable voltage class.)*

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

*(Note –this definition was developed to help provide some measurable basis for determining if a system operating limit is an Interconnection Reliability Operating Limit.)*

**Generator Operator:** Operates generating unit(s) and performs the functions of supplying energy and Interconnected Operations Services.

*Note – This is the definition proposed by the Functional Model Review Task Group for inclusion in the second version of the Functional Model.*

**Generator Owner:** The entity that owns the generator.

*Note – This is the definition proposed by the Functional Model Review Task Group for inclusion in the second version of the Functional Model.*

**Instability:** The inability of the transmission system to maintain a state of equilibrium during normal and abnormal system conditions or disturbances.

**Interconnection Reliability Operating Limit:** A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk electric system.

*(Note – this term was adapted from the term, Interconnection Reliability Limit, drafted by the Operating Limit Definition Task Force.)*

**Interconnection Reliability Operating Limit Event:** An instance of exceeding an interconnection reliability operating limit for any length of time.

*(Note – all IROL Events must be documented.)*

**Interconnection Reliability Operating Limit Event Duration:** The length of time an interconnection reliability operating limit is exceeded. The duration is measured from the point where the limit is first exceeded and ends when the value drops below the limit and remains below the limit for at least 30 seconds.

*(Note –graphics in next section of this Technical Reference shows the application of this 30-second rule.)*

## Questions & Answers About the Operate within Operate within IROLs Standard

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**Load-serving Entity:** Secures energy and transmission (and related generation services) to serve the end user.

*(Note – this term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.)*

**Occurrence period:** The time period in which performance is measured and evaluated.

*(Note – this is a term used by the Compliance Monitors. When you look at the Sanctions Tables, note that the first table’s column headings reference the number of infractions within the Performance-reset period. As the number of infractions within a performance reset period increases, so does the severity of the sanctions.)*

**Operating Procedure** – A document that identifies specific steps or tasks that must be taken by one or more specific operating positions to achieve a single specific operating goal. The steps in an Operating Procedure must be followed in the order in which they are presented, and must be performed by the position(s) identified. A document that lists the specific steps to take in removing a specific transmission line from service is an example of an Operating Procedure.

*(Note – this is a term defined within the Coordinate Operations standard.)*

**Operating Process** – A document that identifies general steps for achieving a generic operating goal. An Operating Process includes steps with options that may be selected depending upon real-time conditions. A guideline for controlling high voltage is an example of an Operating Process.

*(Note – this is a term defined within the Coordinate Operations standard.)*

**Operating Plan-** A document that identifies a group of activities that may be used to achieve some goal. An Operating Plan may contain Operating Procedures and Operating Processes. A company-specific system restoration plan that includes an Operating Procedure for black-starting units, Operating Processes for communicating restoration progress with other entities, etc., is an example of an Operating Plan.

*(Note – this is a term defined within the Coordinate Operations standard.)*

### **Operational Planning Analysis:**

An analysis of the expected system conditions for the next day’s operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.)

*(Note – this standard requires that an operational planning analysis be conducted at least once each day, looking at the day ahead. This does not mean that operational planning analyses are limited to being conducted on a day-ahead basis. For example an operational planning analysis should be conducted as part of approving a transmission line outage – and this operational planning analysis may be conducted several months ahead of the day being reviewed.)*

**Performance-reset Period:** The time period that the entity being assessed must operate without any violations to reset the level of non-compliance to zero.

*(Note – this is a term used by the Compliance Monitors. When you look at the Sanctions Tables, note that the first table’s column headings reference the number of infractions within the Performance-reset period. As the number of infractions within a performance reset period increases, so does the severity of the sanctions.)*

## Questions & Answers About the Operate within Operate within IROLs Standard

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**Real-time:** Present time as opposed to future time.

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

**Real-time Data:** Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values – may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

*(Note – this definition supports the concept that monitoring is an ‘active’ task. The system operator assigned to monitor system conditions should be prepared to answer questions about what he/she has been monitoring without any preparation time. Simple questions can be used to determine whether or not monitoring has taken place. For example, a system operator who has been monitoring real time data to see if the area under the operator’s direction is approaching or exceeding any IROLs should be able to answer the question, “ Are there any IROLs on your system that have been exceeded? If any have been exceeded, are you approaching or exceeding the IROL’s  $T_v$ ?”*

**Reliability Authority:** Ensures the reliability of the bulk power transmission system within its Reliability Authority Area.

*(Note – this term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.)*

**Reliability Authority Area:** The collection of generation, transmission, and loads within the boundaries of the Reliability Authority. Its boundary coincides with one or more Balancing Areas.

*Note – This is the definition proposed by the Functional Model Review Task Group for inclusion in the second version of the Functional Model.*

**Self-certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

*Note: This is a term used by the Compliance Monitors.*

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

*Note – Operating Policy 2 – Standard A.2 included the following requirement:*

*Following a contingency or other event that results in an OPERATING SECURITY LIMIT violation, the CONTROL AREA shall return its transmission system to within OPERATING SECURITY LIMITS soon as possible, but no longer than 30 minutes.*

*This new standard requires results within ‘ $T_v$ ’ minutes. Some IROLs are so critical that exceeding them for 30 minutes may be too long. See the charts in the next section for examples of how  $T_v$  is used to determine whether an instance of exceeding an IROL must be reported to the Compliance Monitor.*

## Questions & Answers About the Operate within Operate within IROLs Standard

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**Transmission Operator:** The entity that operates the transmission facilities and executes switching orders.

*(Note – this term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.)*

**Transmission Owner:** Owns transmission facilities

*(Note – this term was defined in the NERC Functional Model approved by the NERC Board of Trustees, June 12, 2001.)*

**Uncontrolled Separation:** The unplanned break-up of an interconnection, or portion of an interconnection, that is not the result of automatic action by a special protection system or remedial action scheme operating correctly.

**Wide Area Impact:** The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked transmission load for a minimum of 15 minutes.

*(Note – this term was modified to provide a more measurable basis for determining whether a System Operating Limit should also be an Interconnection Reliability Operating Limit. The Standard Drafting Team adopted the threshold criteria used for reporting major incidents to the Department of Energy as the threshold for determining whether an event had a ‘wide area’ impact.)*



## Questions & Answers About the Operate within Operate within IROLs Standard

### Questions and Answers

#### *Who needs to comply with this standard?*

Each of the requirements in the standard assigns responsibility for that requirement to one or more ‘functions.’ The entities performing the listed functions are the entities that must comply with that requirement. Most of the requirements are applicable to entities that perform the Reliability Authority Function – but several functions are assigned responsibility for the Data Provision and RA Directives requirements.

Requirement	Entities that Perform these Functions Must Comply With the Requirements							
	Reliability Authority	Balancing Authority	Interchange Authority	Trans. Operator	Trans. Owner	Gen. Owner	Gen. Operator	Load Serving Entity
201 IROL Identification	X							
202 Monitoring	X							
203 Analyses & Assessments	X							
204 Actions	X							
205 Data Specification & Collection	X							
206 Data Provision	X	X		X	X	X	X	X
207 Processes, Procedures or Plans	X							
208 RA Directives		X	X	X				

### ***When does compliance with this standard start?***

Several things must be in place before entities are expected to come into full compliance with all of the requirements in this standard. Most importantly, the Operate within IROLs Standard can't be implemented until after the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard has been implemented. The methodology for developing system operating limits must be in place and the RA must identify system operating limits before the RA can be held accountable for identifying which of its system operating limits are IROLs. There are other parts of the standard that will take some time to put into place if they aren't already in place. Some entities performing the RA function may have a detailed data specification that could be used to meet the Data Specification requirement in this standard – but other entities may have handled this requirement on a more casual basis and may need some time to formalize their data specifications.

### ***For a System Operator - how does this new standard differ from Operating Policy 2 - Transmission?***

There are three significant differences between what is expected of system operators under Policy 2, and what is expected of system operators under Standard 200.

#### **Major Difference #1 – Term, 'OSLs' replaced with term, 'IROLs'**

The first difference is a terminology change. The NERC Director–Compliance reports on compliance violations at each NERC Board of Trustees Meeting. He noted an increase in the number of OSL violations, and was directed by the BOT to investigate the cause. The investigation results showed a widespread misunderstanding on what was/was not an OSL. The task force that worked on this problem, called the Operating Limits Definitions Task Force (OLDTF) recommended that the term, "Operating Security Limit" not be used in the future because of the widespread misunderstanding associated with this term. The new standard uses the term, 'Interconnection Reliability Operating Limit – IROL'.

From the Terms Used in the Operating Policies, here is the definition of an Operating Security Limit (OSL):

- The value of a system operating parameter (e.g. total power transfer across an interface) that satisfies the most limiting of prescribed pre- and post-contingency operating criteria as determined by equipment loading capability and acceptable stability and voltage conditions.

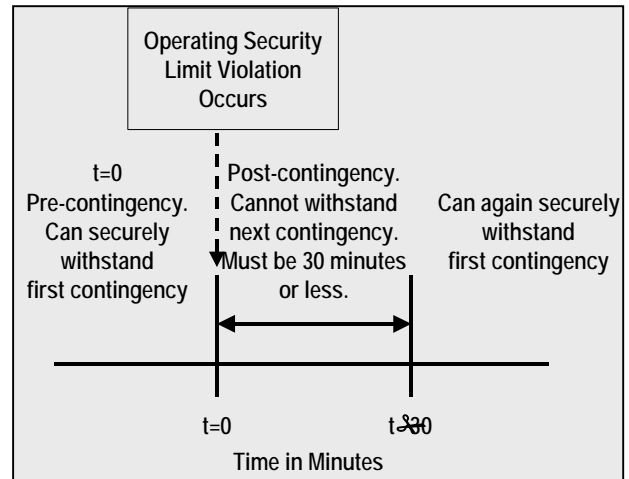
From the Operate within IROLs Standard, here is the definition of an Interconnection Reliability Operating Limit (IROL):

- A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk electric system.

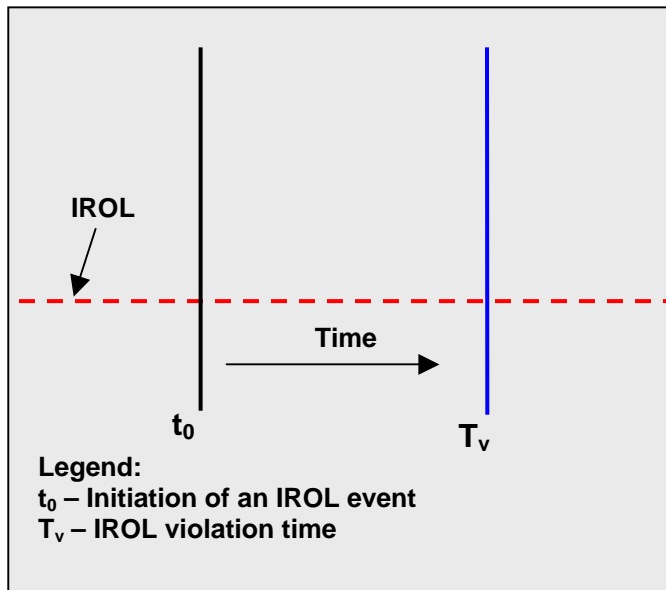
**Major Difference #2 –Resolution time changed from a uniform ‘30-minutes’ for all OSLs to a ‘unique’  $T_v$  that can’t exceed 30 minutes for each IROL**

Policy 2 has a standard ‘30 minute’ response time for resolving any instance of exceeding an operating security limit. The 30 minutes was established to give system operators enough time to recognize the problem and take corrective actions. The new Operate within IROLs standard is designed from a perspective of system risk, and doesn’t have a standard ‘30 minute’ response time.

$T_v$  is the maximum amount of time the system operator has to return to a state that is at or below the limit before being subjected to compliance sanctions.  $T_v$  is based on system risk – and recognizes that some IROLs shouldn’t be exceeded for longer than 10 minutes without causing an unacceptable risk to the interconnection. Each IROL may have its own  $T_v$  but no  $T_v$  may exceed 30 minutes.



*From Policy 2 – all OSLs addressed with the same 30-minute maximum resolution time*



← *Operate within IROLs Standard - each IROL may have its own  $T_v$ .*

*For IROLs that should never be exceeded,  $T_v$  may be zero minutes.*

**Major Difference #3 – New Report for IROL Violations**

Policy 2 requires that a NERC Preliminary Disturbance Report be completed for OSL Violations that exceed 30 minutes – The Preliminary Disturbance Report asks for a preliminary analysis to be conducted regarding the cause of the event – and is still needed. The new report is a compliance document and doesn’t require the same data that is required of the Preliminary Disturbance Report.

The data that is collected in the IROL Violations Report is data that should be readily available to the system operator shortly after an instance of exceeding an IROL. The report doesn’t ask for an analysis, just for a collection of the facts such as what limit was exceeded, how long was it exceeded, etc. The new report must be filed with the compliance monitor within 5 days of the event.

### ***What is an IROL?***

An IROL is a special type of system operating limit. While operating so that system operating limits aren't exceeded is always important, if an IROL is exceeded, there is an increased risk of voltage instability, cascading outages or uncontrolled separation that adversely impacts the interconnection.

System Operating Limits are monitored by system operators working for entities performing the Transmission Operator function and may also be monitored by system operators working for entities performing the Reliability Authority function.

IROLs are monitored by the Reliability Authority. The Reliability Authority may delegate this task to system operators working for entities performing the Transmission Operator function, but it is the Reliability Authority that is held accountable for ensuring that IROLs aren't exceeded.

### ***What is the IROL's $T_v$ ?***

$T_v$  is the maximum amount of time the system operator has to return to a state that is at or below the limit before being subjected to compliance sanctions.

The  $T_v$  associated with each IROL is a time value used to assess how quickly the interconnection may deteriorate if an IROL isn't mitigated. IROLs should never be exceeded – but if one is exceeded, the  $T_v$  represents the maximum amount of time the limit can be exceeded before the risk to the interconnection becomes unacceptable. Under this standard, if a  $T_v$  is exceeded, there are financial penalties and additional reporting requirements.

### ***Why don't all IROL's have the same $T_v$ ?***

The IROL's  $T_v$  is based on system risk – and recognizes that exceeding some IROLs is unacceptable for any length of time, while exceeding other IROLs can probably be tolerated for a longer period of time before there is an unacceptable risk to the interconnection. By establishing a  $T_v$  for each IROL, the RA has information needed to anticipate the negative results of exceeding an IROL. If an IROL can't be exceeded for any length of time, then the RA may choose to install a special protection scheme to control the risk of exceeding the limit in real time. Note that  $T_v$  may not exceed 30 minutes.

### ***If an RA installs a special protection scheme to reduce the probability of exceeding an IROL for time greater than the limit's $T_v$ , does this eliminate the IROL?***

No. The facility being protected by the special protection scheme would still need to be included in the list of facilities subject to IROLs, and the IROL would need to be listed with its  $T_v$ . Since special protection schemes don't always work as planned, it is important that system operators know where they have IROLs, know which facilities are subject to IROLs and know what the  $T_v$  is for each IROL. The system operator needs access to this data to make appropriate system operating decisions when special protection schemes don't work as planned.

### ***How do you develop a list of IROL's?***

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities standard includes a requirement that entities responsible for developing system operating limits document their methodology for developing these limits. The RA is responsible for developing the subset of system operating limits that are called IROLs. The RA must follow its methodology for developing system operating limits and then must identify whether or not exceeding that limit could cause voltage instability, cascading outages, or uncontrolled separation from the interconnected transmission system. If the system operating limit could lead to one or more of these dire consequences, then the limit is an IROL.

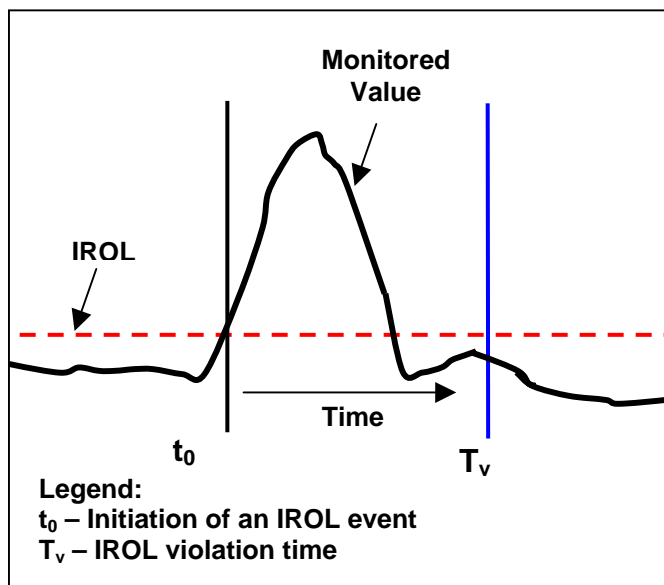
### **How do you establish a $T_v$ for an IROL?**

Each RA may use whatever system it wants for establishing a  $T_v$  for its IROLs. This gives each RA the latitude to be as conservative as it desires. Some RAs may choose to use a default  $T_v$  of 30 minutes – currently some entities have a default of 20 minutes for all limits that would be categorized as IROLs. Here are some ways of setting  $T_v$ :

- Use study results showing the impact of a loss of a unit or line
- Set  $T_v$  at or lower than ‘published’ acceptable time overloads for critical facilities and
- Reference relay settings that have time delays before tripping overloaded facilities

### **Which instances of exceeding an IROL need to be documented?**

All. Every instance of exceeding an IROL for any length of time must be documented. Most entities are expected to document the instance on a system operating log, but the standard does not require that the documentation be on an operating log, just that it be documented.



### **Does the standard require that exceeding an IROL be documented on the system operator’s daily log?**

No. Each entity can document IROL events using whatever documentation system works best for them. While each entity may use whatever system(s) it chooses to document instances of exceeding IROLs, the documentation must be retrievable so it can be shown to the Compliance Monitor. The data can be retrievable through computer screen displays, through paper or electronic logs, or other sources.

### **When you exceed an IROL, what do you have to document?**

When you exceed an IROL for any length of time, you need to document the following three things:

- Actions taken or directives issued
- Magnitude of the event
- Duration of the event

### **How many IROLs do you expect the ‘typical’ RA to have in a year?**

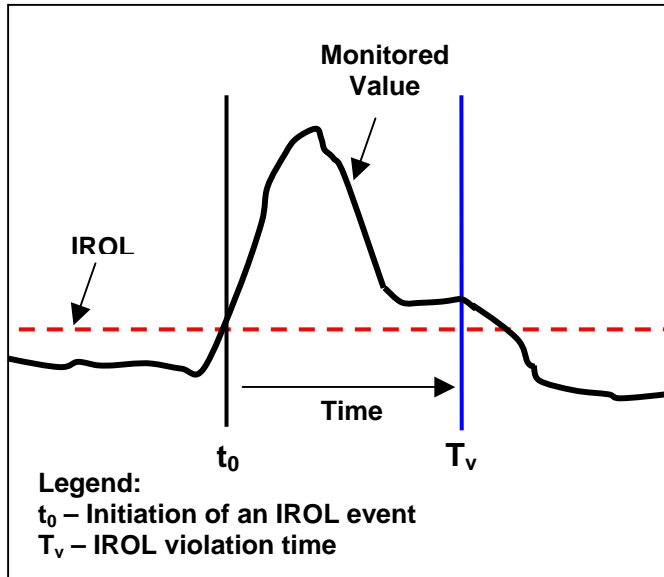
None! This standard focuses on preventing instances of exceeding an IROL. This standard requires the RA to use its tools to actively monitor and assess its Reliability Authority Area with respect to the current

## Questions & Answers About the Operate within IROLs Standard

and expected system conditions. For emerging system conditions, the RA is required to act to prevent exceeding an IROL. For unusual situations, such as a plane crash that knocks down 500kV lines, the RA is required to act to mitigate the instance within the IROL's  $T_v$ . Since most RA's can go many years without ever having a plane crash through their 500kV lines, most RAs won't experience any instances of exceeding an IROL for any length of time.

### **Which instances of exceeding an IROL need to be reported?**

Every instance of exceeding an IROL for time greater than the IROL's  $T_v$  is reported to the Compliance Monitor within five business days.



*The value being monitored exceeded its IROL for a time greater than the IROL's  $T_v$  and the event must be documented **and** reported.*

### **When you exceed an IROL for a time greater than the IROL's $T_v$ , what do you have to report?**

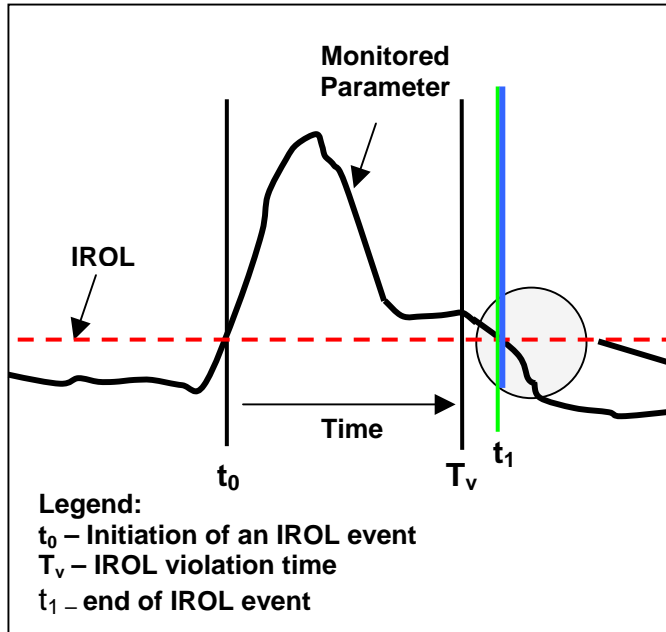
When you exceed an IROL for a time greater than the IROL's  $T_v$ , you have to report the following information to the Compliance Monitor:

- Date and time of the event
- Identification of which interconnection reliability operating limit was violated
- $T_v$  for that limit
- Magnitude and duration of exceeding the interconnection reliability operating limit
- Actions taken or directives issued
- Time actions or directives were initiated or issued,
- Explanation of results of actions or directives

There is a report called the IROL Violation Report that captures this information. This report is available from the NERC Web Site and is provided at the end of this document.

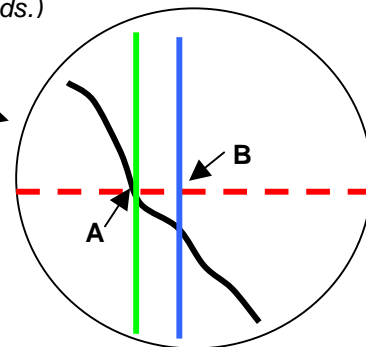
**How do you calculate the duration of an IROL event?**

The duration of an IROL event is measured from the point in time when the IROL is first exceeded to the point in time where the parameter being monitored has returned to a value that is at or below the IROL, providing the actual value remains at or below the IROL for at least 30 seconds.



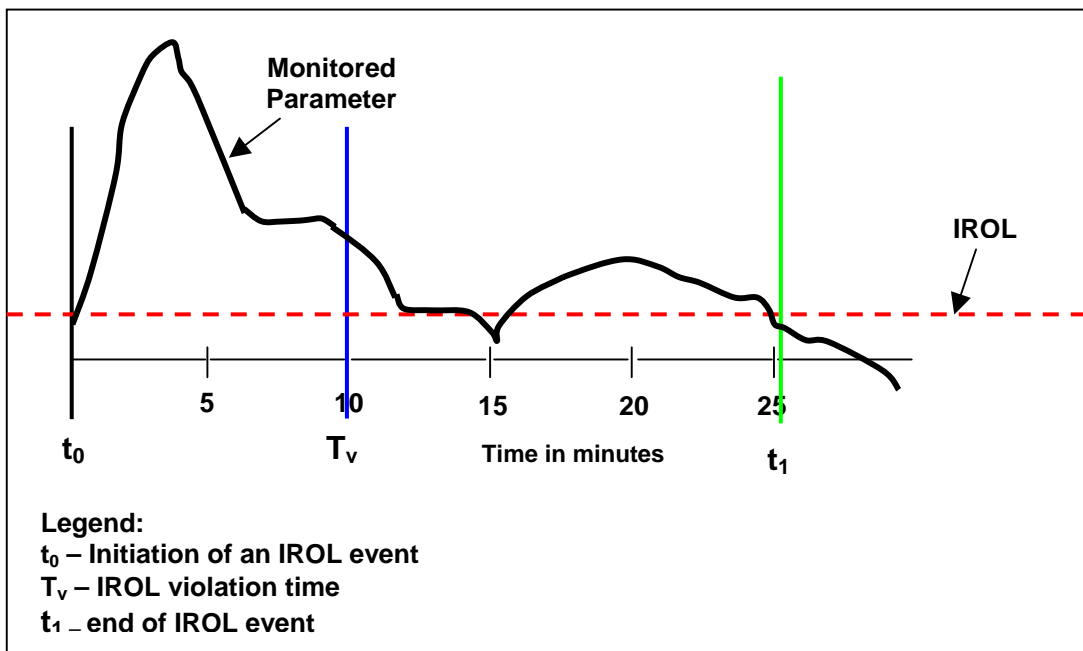
The monitored parameter must remain at or below the IROL for 30 seconds or more.

The line for  $t_1$  shows the end of the IROL event, which is the point in time when the monitored value returns to a value that is at or below the IROL as long as the monitored value remains at or below the limit for at least 30 seconds. (From pt. A to pt. B is 30 seconds.)



The following example is shown in the chart below. The IROL that has been exceeded has a  $T_v$  of 10 minutes. The monitored value exceeds the IROL for 15 minutes, then the monitored value returns to a value that is below that IROL for just 20 seconds, then the monitored value exceeds the IROL for another 10 minutes – then the monitored value returns to a value that is below the IROL for 2 hours. The duration of the event that must be reported is:

- 25 minutes, 20 seconds



## Questions & Answers About the Operate within Operate within IROLs Standard

### *If you exceed an IROL for time greater than $T_v$ , how big is the sanction?*

This is the table used to determine the size of the sanction when an IROL is exceeded for time greater than  $T_v$ .

Example 1: There is an IROL set at 1000 MW with a  $T_v$  of 30 minutes. The IROL is exceeded for 35 minutes. During the time period after  $T_v$  was exceeded (the last 5 minutes of the event), the maximum value was 1100 MW. This is the first IROL violation for this RA.

$$\text{Max Val \%} = (1100 \text{ MW}/1000 \text{ MW} - 1) * 100 = 10$$

The event duration exceeded its  $T_v$  by 5 minutes

The level 4 \$ sanction for the first infraction is \$2000

The sanction would be  $10 * \$2000 = \$20,000$

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45



## Questions & Answers About the Operate within Operate within IROLs Standard

Example 2: There is an IROL set at 1000 MW with a  $T_v$  of 20 minutes. The IROL is exceeded for 35 minutes. During the time period after  $T_v$  was exceeded (the last 5 minutes of the event), the maximum value was 1200 MW. This is the second IROL violation for this RA.

$$\text{Max Val \%} = (1200 \text{ MW}/1000 \text{ MW} - 1) * 100 = 20$$

The event duration exceeded its  $T_v$  by 15 minutes

The level 4 \$ sanction for the second infraction is \$4000

$$\text{The sanction would be } 30 * \$4000 = \$120,000$$

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

### ***What is the philosophy behind the sanction for exceeding an IROL for time greater than $T_v$ ?***

Most RAs will not exceed an IROL. If there is an ‘emerging’ system condition that is causing operations in the Reliability Authority Area to approach operations outside of the IROLs, then the RA should take actions to prevent the system from exceeding the IROL. This standard requires that the RA monitor and assess its Reliability Authority Area so that emerging system conditions are noted and corrected before an IROL can be exceeded. There are unusual circumstances that do occur – such as a plane crashing through a set of 500 kV lines – that will cause an IROL to be exceeded. When this does occur, the RA needs to take action without delay to remedy the situation. If the RA achieves its goals within  $T_v$ , then there is no sanction.

### ***Why isn't the sanction linked to the highest value over the course of the event?***

Because unusual circumstances occur without warning, the sanction isn't linked to the highest value during the event, the sanction is linked to the highest value during the time period after  $T_v$  has been exceeded. This seemed to be the fairest way of applying the sanction – it gives the RA some time to resolve the situation and allows for ‘credit’ to be given if the RA was able to move the system in the right direction, but wasn't able to achieve the goal of getting within the limits before  $T_v$ .

### ***What's the origin of the concept of these sanctions for exceeding IROLs?***

These sanctions are very similar to the sanctions used for Policy 2 and for the WECC RMS program. The sanction for violating Requirement 204 is linked to the magnitude and duration of the infraction and to the history of the entity with respect to prior similar violations – Policy 2's sanction is linked to magnitude and duration of the infraction and to the size of the company that is responsible for preventing the infraction.

### ***What are you expecting in the requirement for Processes, Procedures or Plans?***

The RA needs to anticipate what actions to take to prevent exceeding IROLs as well as the actions to take when an IROL has been exceeded. The RA has to have some type of document that outlines the actions the RA will take to control the situation. The document can be as specific as needed. It is important that the documents be coordinated with entities that will be involved if the process, procedure or plan is invoked. The Coordinate Operations Standard defines these terms as follows:

**Operating Procedure** – A document that identifies specific steps or tasks that must be taken by one or more specific operating positions to achieve a single specific operating goal. The steps in an Operating Procedure must be followed in the order in which they are presented, and must be performed by the position(s) identified. A document that lists the specific steps to take in removing a specific transmission line from service is an example of an Operating Procedure.

**Operating Process** – A document that identifies general steps for achieving a generic operating goal. An Operating Process includes steps with options that may be selected depending upon real-time conditions. A guideline for controlling high voltage is an example of an Operating Process.

**Operating Plan**- A document that identifies a group of activities that may be used to achieve some goal. An Operating Plan may contain Operating Procedures and Operating Processes. A company-specific system restoration plan that includes an Operating Procedure for black-starting units, Operating Processes for communicating restoration progress with other entities, etc., is an example of an Operating Plan.

**IROL Violation Report**

Interconnection Reliability Operating Limit Violation Report Compliance Template			
<b>Entity Performing Reliability Authority Function:</b>			
<b>Report Date:</b>			
<b>Event Date:</b>	<b>Event Start Time:</b>	<b>Event End Time:</b>	
<b>Name of IROL that was exceeded:</b>	<b>Value of the IROL that was exceeded:</b>	<b>The exceeded IROL's T<sub>v</sub>:</b>	
<b>Magnitude of Limit Exceeded after T<sub>v</sub>:</b>		<b>Duration of Event:</b>	
<b>List of Actions Taken or Directives Issued and Results Achieved:</b>			
Time Action Initiated or Directive Issued:	Action Taken or Directive Issued:	Time Action Completed:	Results Achieved:
<b>Report completed by:</b>			
<b>Name:</b>		<b>Phone:</b>	
<b>Title:</b> _____		<b>E-mail:</b>	

# Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits

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## **Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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### **Prerequisite Approvals**

The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard must be implemented before this standard can be implemented.

### **Applicability during Transition to Functional Model**

The requirements in Standard 200 apply to entities performing various electric system functions, as defined in the functional model approved by the NERC Board of Trustees in June 2001. NERC is now developing standards and procedures for the identification and certification of such entities. Until that identification and certification is complete, these standards apply to the existing entities (such as control areas, transmission owners and operators, and generation owners and operators) that are currently performing the defined functions.

## Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits

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### Retirement of Sections of Operating Policies

Many elements contained in Standard 200 address the same or similar performance objectives as sections of Operating Policy 2, Operating Policy 4, Operating Policy 5 and Operating Policy 9. To eliminate duplication and minimize confusion, the following sections of existing Operating Policies should be retired when this standard is implemented. Justification for these retirements is provided in the tables on the following pages.

#### Operating Policy 2:

- Standard A.1
- Standard A.1.2
- Standard A.2
- Requirement A.1 (just last 2 bullets)
- Requirement A.1.1
- Requirement A.1.2
- Requirement B.5

#### Operating Policy 4:

- Requirement A.1
- Requirement B.3
- Requirement B.3.1
- Requirement B.4
- Requirement B.4.1
- Appendix 4BA

#### Operating Policy 5:

- Requirement 5.C.1
- Requirement 5.C.2

#### Operating Policy 9:

- Requirement A.1
- Requirement A.1.1
- Requirement A.1.2

#### Other Changes:

- Operating Policy 4, Requirement A.2 should be ‘tagged’ to note that the requirement is no longer applicable to system operators working for entities performing the Reliability Authority function, but is still applicable to system operators working for entities performing the Transmission Operator function.



**Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits**

**Policy Retirements or Revisions**

The following tables identify the sections of existing Operating Policies that shall be retired when this standard is implemented.

Policy 2 – Transmission Language in Policy	Standard 200 Replacement Requirement
<p><b>Standard A.1.</b>  <b>Basic reliability requirement regarding single contingencies.</b> All CONTROL AREAS shall operate so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single contingency.</p>	<p>204. 1.1 The Reliability Authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul>
<p><b>Standard A .1 .2.</b>  <b>Operating Security Limits.</b> Operating Security Limits define the acceptable operating boundaries.</p>	<p>201.1 The Reliability Authority shall identify and document which facilities (or groups of facilities) in the Reliability Authority’s reliability area are subject to Interconnection Reliability Operating Limits.</p> <p>201.2 The Reliability Authority shall identify each Interconnection Reliability Operating Limit within the Reliability Authority’s reliability area.</p> <ul style="list-style-type: none"> <li>- The Reliability Authority shall identify a T<sub>v</sub> for each Interconnection Reliability Operating Limit.</li> </ul>
<p><b>Standard A.2.</b>  <b>Return from OPERATING SECURITY LIMIT Violation.</b> Following a contingency or other event that results in an OPERATING SECURITY LIMIT violation, the CONTROL AREA shall return its transmission system to within OPERATING SECURITY LIMITS soon as possible, but no longer than 30 minutes.</p>	<p>204.1.1 The Reliability Authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul>



**Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits**

Policy 2 – Transmission Language in Policy	Standard 200 Replacement
<p><b>Requirement A.1.</b> Policies for dealing with transmission security. CONTROL AREAS, individually and jointly, shall develop, maintain, and implement formal policies and procedures to provide for transmission security. These policies and procedures shall address the execution and coordination of activities that impact inter- and intra-Regional security, including:</p> <ul style="list-style-type: none"> <li>- Equipment ratings</li> <li>- Monitoring and controlling voltage levels and real and reactive power flows</li> <li>- Switching transmission elements</li> <li>- Planned outages of transmission elements</li> <li>- <b>Development of Operating Security Limits</b></li> <li>- <b>Responding to OPERATING SECURITY LIMIT violations.</b></li> </ul>	<p><i>(Only highlighted items should be retired.)</i></p> <p>201.1 The Reliability Authority shall identify and document which Facilities (or groups of Facilities) in its Reliability Authority Area are subject to Interconnection Reliability Operating Limits<sup>1</sup>.</p> <p>201.2 The Reliability Authority shall identify Interconnection Reliability Operating Limits for its Reliability Authority Area. Each Interconnection Reliability Operating Limit shall have a T<sub>v</sub> that is smaller than or equal to 30 minutes.</p> <p>201.3 All Reliability Authorities that share a Facility (or group of Facilities) subject to an Interconnection Reliability Operating Limit shall agree upon the process used to determine that Interconnection Reliability Operating Limit and its associated T<sub>v</sub></p> <p>207.1.1 The Reliability Authority shall have one or more processes, procedures or plans that identify actions it shall take or actions it shall direct others to take, for both prevention and mitigation of instances of exceeding its Interconnection Reliability Operating Limits.</p> <p><i>(Operating Security Limits that, when exceeded may cause instability and cascading outages on the bulk electric system have now been defined as Interconnection Reliability Operating Limits (IROLs) within this standard.)</i></p>
<p><b>Requirement A.1.1.</b> Responsibility for transmission security. When OPERATING SECURITY LIMIT violations occur, or are expected to occur, the CONTROL AREAS affected by and the CONTROL AREAS contributing to these violations shall implement established joint actions to restore transmission security.</p>	<p>204.1.1 The Reliability Authority shall, without delay, act or direct others to act to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul>

<sup>1</sup> Each IROL is developed by following the requirements in the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.

**Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits**

Policy 2 – Transmission Language in Policy	Standard 200 Replacement
<p><b>Requirement A.1.2.</b> Action to keep transmission within limits. CONTROL AREAS shall take all appropriate action up to and including shedding of firm load in order to comply with Standard 2.A.2.</p>	<p>204.1.1 The Reliability Authority shall, without delay, act or direct others to act to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul> <p>208.1.1 The Transmission Operator, Balancing Authority and Interchange Authority shall follow the Reliability Authority’s directives to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul>
<p><b>Requirement B.5.</b> <b>Preventing Voltage Collapse.</b> The SYSTEM OPERATOR shall take corrective action, including load reduction, necessary to prevent voltage collapse when reactive resources are insufficient.</p>	<p>204.1.1 The Reliability Authority shall act or direct others to act to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul> <p><i>(Note that IROLs may be voltage limits)</i></p>

**Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits**

<p align="center"><b>Policy 4 – System Coordination</b></p> <p align="center"><b>Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>Section A – Monitoring System Conditions</b>  <b>Requirement A.1 Resources.</b> The system operator shall be kept informed of all generation and transmission resources available for use.</p>	<p><i>Keep for transmission operator’s system operators</i></p> <p>205.1.1 The Reliability Authority shall specify and collect the data it needs to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments conducted relative to operating within its reliability area’s Interconnection Reliability Operating Limits. The Reliability Authority shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Authority, and from entities that provide Real-time Facility status to the Reliability Authority. This includes specifying and collecting data from the following:</p> <ul style="list-style-type: none"> <li>- Balancing Authorities</li> <li>- Generator Owners</li> <li>- Generator Operators</li> <li>- Reliability Authorities</li> <li>- Transmission Operators</li> <li>- Transmission Owners</li> <li>- Load Serving Entities</li> </ul>
<p><b>Requirement A.2 Transmission status and data.</b> System operators shall monitor transmission line status, MW and MVAR flows, voltage, LTC settings and status of rotating and static reactive resources</p>	<p><i>Keep for transmission operator’s system operators</i></p> <p>202.1.1 The Reliability Authority shall perform Real-time Monitoring of system operating parameters to determine if the Reliability Authority Area is operating within its Interconnection Reliability Operating Limits.</p>

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<p align="center"><b>Policy 4 – System Coordination</b></p> <p align="center"><b>Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>B3 – Data required from control areas</b></p> <p><b>3. Data required from Control Areas.</b> Each CONTROL AREA shall provide its SECURITY COORDINATOR(S) with the Electric System Security Data that is necessary to allow THE SECURITY COORDINATOR(S) to perform its operational security assessments and coordinate reliable operations.</p> <p><b>3.1 Data.</b> CONTROL AREAS shall provide the types of data as listed in Appendix 4B, “Electric System Security Data, Section A, Electric System Security Data”, unless otherwise agreed to by the CONTROL AREAS and their SECURITY COORDINATOR(S).</p>	<p>206.1.1 Each entity performing one of the following functions shall provide data, as specified, to the Reliability Authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>- Balancing Authorities</li> <li>- Generator Owners</li> <li>- Generator Operators</li> <li>- Reliability Authorities</li> <li>- Transmission Operators</li> <li>- Transmission Owners</li> <li>- Load Serving Entities</li> </ul>
<p><b>4. Data exchange among SECURITY COORDINATORS.</b> Upon request, SECURITY COORDINATORS shall, via the ISN, exchange with each other Electric Security Data that is necessary to allow the SECURITY COORDINATORS to perform their operational security assessments and coordinate their reliable operations.</p>	<p>206.1.1 Each entity performing one of the following functions shall provide data, as specified, to the Reliability Authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>- Balancing Authorities</li> <li>- Generator Owners</li> <li>- Generator Operators</li> <li>- Reliability Authorities</li> <li>- Transmission Operators</li> <li>- Transmission Owners</li> <li>- Load Serving Entities</li> </ul>

<p align="center"><b>Policy 4 – System Coordination</b></p> <p align="center"><b>Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>4.1. Data.</b> SECURITY COORDINATORS shall share with each other the types of data as listed in Appendix 4B, “Electric System Security Data, Section A, Electric System Security Data”, unless otherwise agreed to.</p>	<p>206.1.1 Each entity performing one of the following functions shall provide data, as specified, to the Reliability Authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>- Balancing Authorities</li> <li>- Generator Owners</li> <li>- Generator Operators</li> <li>- Reliability Authorities</li> <li>- Transmission Operators</li> <li>- Transmission Owners</li> <li>- Load Serving Entities</li> </ul>

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<p><b>Appendix 4BA</b></p>	<p>205.1.1 The Reliability Authority shall specify and collect the data it needs to support Real-Time Monitoring, Operational Planning Analyses And Real-Time Assessments conducted relative to operating within its Reliability Authority Area’s Interconnection Reliability Operating Limits. The Reliability Authority shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Authority, and from entities that provide Real-time Facility status to the Reliability Authority. This includes specifying and collecting data from the following:</p> <ul style="list-style-type: none"> <li>- Balancing Authorities</li> <li>- Generator Owners</li> <li>- Generator Operators</li> <li>- Reliability Authorities</li> <li>- Transmission Operators</li> <li>- Transmission Owners</li> <li>- Load Serving Entities</li> </ul>
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<p><b>Policy 5 – Emergency Operations Language in Policy</b></p>	<p><b>Standard 200 Replacement</b></p>
<p><b>Requirement 5.C.1. Relieving security limit violations.</b> Each CONTROL AREA experiencing or materially contributing to an OPERATING SECURITY LIMIT violation shall take immediate steps to relieve the condition.</p>	<p>204.1.1 The Reliability Authority shall, without delay, act or direct others to act to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul> <p>208.1.1 The Transmission Operator, Balancing Authority and Interchange Authority shall follow the Reliability Authority’s directives to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> </ul>

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	<ul style="list-style-type: none"> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul>
<p><b>Requirement 5.C.2 Operator authority and responsibility.</b>  SYSTEM OPERATORS having responsibility for the reliability of the transmission system within a CONTROL AREA, pool, etc. shall be given and shall exercise specific authority to alleviate OPERATING SECURITY LIMIT violations. The authority shall enable the SYSTEM OPERATOR to take timely and appropriate actions including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding load, etc.</p>	<p>204.1.1 The Reliability Authority shall, without delay, act or direct others to act to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul> <p>208.1.1 The Transmission Operator, Balancing Authority And Interchange Authority shall follow the Reliability Authority’s directives to:</p> <ul style="list-style-type: none"> <li>- Prevent instances where Interconnection Reliability Operating Limits may be exceeded</li> <li>- Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded</li> </ul>

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<p align="center"><b>Policy 9 – Security Coordinator Language in Policy</b></p>	<p align="center"><b>Standard 200 Replacement</b></p>
<p><b>Requirement A.1.</b> <b>Perform security analysis.</b> The RELIABILITY COORDINATORS shall ensure that next-day reliability analyses are performed simultaneously for all CONTROL AREAS and TRANSMISSION PROVIDERS in its RELIABILITY AREA to ensure that the bulk power system can be operated in anticipated normal and contingency conditions.</p>	<p>203.1.1 The Reliability Authority shall perform Operational Planning Analyses to assess whether the planned bulk electric system operations within its Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits.</p> <p>203.1.2 The Reliability Authority shall perform Real-Time Assessments to determine if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.</p>
<p><b>1.1. Information sharing.</b> Each CONTROL AREA in the SECURITY AREA shall provide information required for system studies, such as critical facility status, load, generation, operating reserve projections, and known INTERCHANGE TRANSACTIONS. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection, and 1200 Pacific Standard Time for the Western Interconnection.</p>	<p>206.1.1 Each entity performing one of the following functions shall provide data, as specified, to the Reliability Authority(ies) with which it has a reliability relationship.</p> <ul style="list-style-type: none"> <li>- Balancing Authority</li> <li>- Generator Owners</li> <li>- Generator Operators</li> <li>- Reliability Authorities</li> <li>- Transmission Operators</li> <li>- Transmission Owners</li> <li>- Load Serving Entities</li> </ul> <p><i>(Note that this data is only a subset of the data addressed in Policy 9 Requirement A.1.1.1)</i></p>



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<p><b>Requirement A.1.2.</b> <b>System Studies.</b> The RELIABILITY COORDINATORS shall conduct studies to identify potential interface and other OPERATING RELIABILITY LIMIT violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p>	<p>203.1.1 The Reliability Authority shall perform Operational Planning Analyses to assess whether the planned bulk electric system operations within its Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits.</p> <p>203.1.2 The Reliability Authority shall Perform Real-Time Assessments to determine if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.</p>
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**Compliance with Standard**

Requirement	Functions that Must Comply With the Requirements							
	Reliability Authority	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
201 IROL Identification	X							
202 Monitoring	X							
203 Analyses & Assessments	X							
204 Actions	X							
205 Data Specification & Collection	X							
206 Data Provision	X	X		X	X	X	X	X
207 Processes, Procedures or Plans	X							
208 RA Directives		X	X	X				

## Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits

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### *Phased-in Compliance*

The following table identifies the implementation date and the earliest compliance date for each requirement.

The implementation date is the date entities are expected to begin meeting the performance identified in this standard. Because this standard rests upon the communication of system operating limits as defined in Requirement 204 - 604 Communication of System Operating Limits, the compliance dates are fixed from that date. Additional time (preparation time) has been added to give entities time needed to fully comply with the requirements. The justification for the staggered effective dates is in the tables on the following pages.

<b>Requirement</b>	<b>Effective Date</b>	<b>Compliance Date</b>
201 - IROL Identification	3 months from BOT adoption	6 months from implementation of Requirement 604
202 – Monitoring	3 months from BOT adoption	6 months from implementation of Requirement 604
203 - Analyses and Assessments	3 months from BOT adoption	6 months from implementation of Requirement 604
204 - Actions	3 months from BOT adoption	6 months from implementation of Requirement 604
205 – Data Specification & Collection	3 months from BOT adoption	9 months from implementation of Requirement 604
206 – Data Provision	3 months from BOT adoption	12 months from implementation of Requirement 604
207 – Processes, Procedures or Plans	3 months from BOT adoption	6 months from implementation of Requirement 604
208 – Reliability Authority Directives	3 months from BOT adoption	9 months from implementation of Requirement 604

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<b>Requirement 201 – IROL Identification</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
201.1	<p>The Reliability Authority shall have a list of Facilities (or group of Facilities) in its Reliability Authority Area that are subject to Interconnection Reliability Operating Limits.</p> <p>(i) The Reliability Authority shall have evidence it has reviewed and updated its list of Facilities (or groups of Facilities) to reflect changes in its Reliability Authority Area’s system topology.</p>	<p>This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy – only additional time needed would be to produce some evidence that list has been updated</p>
201.2	<p>The Reliability Authority shall be able to identify the current values of the Interconnection Reliability Operating Limits it monitors. Each of these Interconnection Reliability Operating Limits shall have a <math>T_v</math> that is smaller than or equal to 30 minutes.</p> <p>(i) The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated <math>T_v</math>.</p>	<p>Current policy has a 30-minute response time for all limits. Entities may need additional time to establish variable <math>T_v</math>s for IROLs. This should be done within 6 months.</p> <p>This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy – only additional time needed would be to put produce some evidence that list has been updated and this could be done in less than a week if needed.</p>
201.3	<p>The Reliability Authority shall be able to demonstrate that its Interconnection Reliability Operating Limit values and their <math>T_v</math> reflect current system conditions.</p>	<p>This should not require any additional work – if limits are being updated to reflect ‘current’ conditions today, then the ability exists.</p>

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<b>Requirement 202 – Monitoring</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
202.1	The Reliability Authority shall have a list of Facilities (or groups of Facilities) subject to IROLs available for its operations personnel’s Real-time use.	This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy – only additional time needed would be to produce some evidence that list has been updated
202.2.	The Reliability Authority shall have Interconnection Reliability Operating Limits available for its operations personnel’s Real-time use.	This should already be done in some format to comply with existing Operating Policy – only additional time needed would be to re-title the limits as IROLs.
202.3	The Reliability Authority shall have Real-time Data available in a form that system operators can compare to the Interconnection Reliability Operating Limits.	This should already be done in some format to comply with existing Operating Policy – only additional time needed would be to let system operators know that the limits are called IROLs and may have unique T <sub>v</sub> s.
202..4	The Reliability Authority shall monitor real-time system operating parameters and compare these against its Interconnection Reliability Operating Limits.	This should already be done in some format to comply with existing Operating Policy – only additional time needed would be to let system operators know that the limits are called IROLs and may have unique T <sub>v</sub> s.

**Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits**

<b>Requirement 203 – Analyses and Assessments</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
203..1	The Reliability Authority shall identify operating situations or events that impact its Reliability Authority Area’s ability to operate without exceeding any Interconnection Reliability Operating Limits.	This should already be done in some format to comply with existing Operating Policy – only additional time needed would be to let system operations personnel know that the limits are called IROLs and may have unique T <sub>v</sub> s.
203.1.i.	The Reliability Authority shall conduct an Operational Planning Analysis at least once each day, evaluating the next day’s projected system operating conditions.	This should already be done to comply with existing Operating Policy – current operating practice in many locations is to do the analysis each day for the day ahead only on weekdays, and to do the ‘weekend ahead’ on Friday. Many entities do not conduct an operational planning analysis on Saturday or Sunday for Sunday and Monday. Entities may need some time to train additional personnel so that the analysis could be conducted every day of the week.
203.1ii	The Reliability Authority shall conduct a Real-time Assessment periodically, but at least once every 30 minutes.	This should already be done to comply with existing Operating Policy – only additional time needed would be to let system operators know that the limits are called IROLs and may have unique T <sub>v</sub> s and to identify that the assessment must be conducted at least once every 30 minutes.

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<b>Requirement 204 - Actions</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
204.1.1	<p>The Reliability Authority shall have documentation to support each instance where actions were taken or directives were issued to mitigate the magnitude and duration of exceeding an Interconnection Reliability Operating Limit.</p> <p>(i) The documentation shall include the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity’s energy management system, or may be from some other source.)</p>	<p>This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.</p>
204.2.	<p>The Reliability Authority shall report each instance of exceeding an Interconnection Reliability Operating Limit for time greater than <math>T_v</math>:</p> <p>(i) The Reliability Authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its Compliance Monitor within five business days of the initiation of the event. (The report includes the date and time of the event; identification of which Interconnection Reliability Operating Limit was violated and the <math>T_v</math> for that limit; magnitude and duration of exceeding the Interconnection Reliability Operating Limit after exceeding <math>T_v</math>; actions taken or directives issued and the time these were initiated or issued; explanation of results of actions or directives.)</p>	<p>This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.</p> <p>This also requires that the Compliance Enforcement Program accept the IROL Violation Report developed by the IROL SDT. The report collects only the information identified in the measure.</p> <p>This also requires that the RA know which entity is acting as its compliance monitor.</p> <p>This also requires that the IROL Violation Report be made available to the RAs.</p>

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<b>Requirement 205 – Data Specification &amp; Collection</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
205..1	<p>The Reliability Authority shall have a documented specification for data needed to build and maintain models needed to support real time monitoring, operational planning analyses and real time assessments relative to Interconnection Reliability Operating Limits.</p> <p>(i) Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.</p>	<p>Many entities may not have a data specification in place. The data specification may be distributed in several other documents, and entities may need time to assemble this. Since the data needed is known, even if it is not formally documented, it should be possible to accomplish this documentation within 9 months – this includes time to come to ‘mutual agreement’ with other entities.</p>
205.1.ii	<p>Specification shall address the data provision process to use when automated real-time system operating data is unavailable.</p>	<p>This may not exist and may need to be developed. It should be possible to develop this within the 9 month period identified for developing the complete data specification.</p>
205.2	<p>The Reliability Authority shall have evidence that it has distributed its data specification to the entities that have Facilities monitored by the Reliability Authority and to entities that provide Real-time Facility status to the Reliability Authority.</p>	<p>This requires documentation that wouldn’t be available until after the data specification were completed. This should be done no later than 10 months after the standard is approved – this allows 9 months to develop the specification, and then a month to deliver it.</p>
205..3	<p>The Reliability Authority shall notify its Compliance Monitor when an entity that has Facilities monitored by the Reliability Authority, or an entity that provides Real-time Facility status to the Reliability Authority, does not provide data as specified and the Reliability Authority was unable to resolve the issue with the entity responsible for providing the data .</p>	<p>This requires that the data specification be developed and distributed. This should come into affect a year after the standard is approved. This allows entities some time to ‘field test’ their data specification before compliance is a factor.</p>
205..3.i	<p>If the Reliability Authority does not receive data as specified and is unable to resolve the situation, then the Reliability Authority shall notify its Compliance Monitor within five business days of discovering that the data is missing.</p>	<p>This also requires that the RA know which entity is acting as its compliance monitor.</p>



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<b>Requirement 206 – Data Provision</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
206.2.1	The entity responsible shall have evidence that it has provided data, as specified, to the requesting Reliability Authority, within the time frame specified, in the mutually agreed upon format.	The Data Specification in requirement 205 needs to be in place before this can be implemented. There should be a 12 month delay in implementing compliance with this measure. This allows entities time to work with their RA to come to agreement with a ‘mutually acceptable format’ and gives the entities that must provide the RA with data a 3 month trial and error period for providing data before there is any compliance measurement.

<b>Requirement 207 – Processes, Procedures or Plans</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
207.2.1	The Reliability Authority shall have one or more documented processes, procedures, or plans that identify both preventing and mitigating instances of exceeding Interconnection Reliability Operating Limits. The processes, procedures, or plans shall identify and be coordinated with those entities responsible for taking actions and with those entities impacted by such actions.	Entities should have this plan in place now. A six-month delay in compliance should allow everyone time to develop a plan if it doesn’t already exist.

**Implementation Plan for Standard 200 – Operate Within Interconnection Reliability Operating Limits**

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<b>Requirement 208 – Reliability Authority Directives</b>		
<b>Measure</b>	<b>Description</b>	<b>Preparation</b>
208.2.1	<p>The responsible entity shall follow the Reliability Authority’s directives and shall document the directives and actions taken to meet the directives.</p> <p>The responsible entity shall document via an operations log or other data source, the following for each directive it receives relative to an Interconnection Reliability Operating Limit:</p> <ul style="list-style-type: none"><li>- Date and time of directive received</li><li>- Directive issued</li><li>- Actions taken in response to directive</li></ul>	<p>This should already be done and no additional time for preparation should be needed.</p>

### Definitions

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high-voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**Generator Owner:** The entity that owns the generator.

**Instability:** The inability of the transmission system to maintain a state of equilibrium during normal and abnormal system conditions or disturbances.

**Interconnection Reliability Operating Limit:** A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk electric system.

**Interconnection Reliability Operating Limit Event:** An instance of exceeding an Interconnection Reliability Operating Limit for any length of time.

**Interconnection Reliability Operating Limit Event Duration:** The length of time an Interconnection Reliability Operating Limit is exceeded. The duration is measured from the point where the limit is first exceeded and ends when the value drops below the limit and remains below the limit for at least 30 seconds.

**Occurrence Period:** The time period in which performance is measured and evaluated.

**Performance-reset Period:** The time period that the entity being assessed must operate without any violations to reset the level of non-compliance to zero.

**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-time:** Present time as opposed to future time.

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

**Real-time Data:** Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

## Operate Within Interconnection Reliability Operating Limits Standard

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**Reliability Authority Area:** The collection of generation, transmission, and loads within the boundaries of the organization performing the Reliability Authority function. Its boundary coincides with one or more Balancing Authority areas.

**Self-certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

**Transmission Operator:** The entity that operates the transmission facilities and executes switching orders.

**Uncontrolled Separation:** The unplanned break-up of an interconnection, or portion of an interconnection, that is not the result of automatic action by a special protection system or remedial action scheme operating correctly.

**Wide-Area Impact:** The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

## 200 — Operate Within Interconnection Reliability Operating Limits

- 201 Interconnection Reliability Operating Limit Identification
- 202 Monitoring
- 203 Analyses and Assessments
- 204 Actions
- 205 Data Specification and Collection
- 206 Data Provision
- 207 Processes, Procedures, or Plans
- 208 Reliability Authority Directives

1. Purpose: To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk electric system.
2. Effective Date: This standard will become effective three months after the latter of either the date the NERC Board of Trustees votes to adopt the Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard or three months after the date the NERC Board of Trustees votes to adopt this standard.

Initial Compliance with the individual requirements will be phased in as follows:

- 201 — Interconnection Reliability Operating Limit Identification — six months from implementation of Requirement 604.
- 202 — Monitoring — six months from implementation of Requirement 604.
- 203 — Analyses and Assessments — six months from implementation of Requirement 604.
- 204 — Actions — six months from implementation of Requirement 604.
- 205 — Data Specification & Collection — nine months from implementation of Requirement 604.
- 206 — Data Provision — 12 months from implementation of Requirement 604.
- 207 — Processes, Procedures, or Plans — six months from implementation of Requirement 604.
- 208 — Reliability Authority Directives — nine months from implementation of Requirement 604.

3. Applicability: These requirements apply to entities performing various electric system functions, as defined in the Functional Model. NERC is now developing standards and procedures for the identification and certification of such entities. Until that identification and certification is complete, this standard applies to the existing entities (such as control areas, transmission owners and operators, and generator owners) that are currently performing the defined functions.

In this standard, the terms Balancing Authority, Generator Operator, Generator Owner, Interchange Authority, Load-serving Entity, Reliability Authority, Transmission Operator, and

## **Operate Within Interconnection Reliability Operating Limits Standard**

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Transmission Owner refer to the entities performing these functions as defined in the Functional Model.

## 201 — Interconnection Reliability Operating Limits Identification

### (a) Requirements

- (1) The Reliability Authority shall identify and document which Facilities (or groups of Facilities) in its Reliability Authority Area are subject to Interconnection Reliability Operating Limits<sup>1</sup>.
  - (i) All Reliability Authorities that share a Facility (or group of Facilities) shall agree on whether that Facility (or group of Facilities) is (are) subject to Interconnection Reliability Operating Limits.
- (2) The Reliability Authority shall identify Interconnection Reliability Operating Limits for its Reliability Authority Area. Each Interconnection Reliability Operating Limit shall have a  $T_v$  that is smaller than or equal to 30 minutes.
- (3) All Reliability Authorities that share a Facility (or group of Facilities) subject to an Interconnection Reliability Operating Limit shall agree upon the process used to determine that Interconnection Reliability Operating Limit and its associated  $T_v$ .

### (b) Measures

- (1) The Reliability Authority shall have a list of Facilities (or group of Facilities) in its Reliability Authority Area that are subject to Interconnection Reliability Operating Limits.
  - (i) The Reliability Authority shall have evidence it has reviewed and updated its list of Facilities (or groups of Facilities) to reflect changes in its Reliability Authority Area's system topology.
- (2) The Reliability Authority shall be able to identify the current values of the Interconnection Reliability Operating Limits it monitors. Each of these Interconnection Reliability Operating Limits shall have a  $T_v$  that is smaller than or equal to 30 minutes.
  - (i) The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$ .
- (3) The Reliability Authority shall be able to demonstrate that its Interconnection Reliability Operating Limit values and their  $T_v$  reflect current system conditions.

### (c) Regional Differences

None identified.

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<sup>1</sup> Each Interconnection Reliability Operating Limit is developed by following the requirements in the Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep data on facilities and limits for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall have the following available upon the request of its Compliance Monitor:
  - (i) List of Facilities (or group of Facilities) in its Reliability Authority Area that are subject to Interconnection Reliability Operating Limits. The list shall be contained on paper, displayed through an Energy Management System, or via another data source.
  - (ii) Evidence that the list of Facilities (or group of Facilities) subject to Interconnection Reliability Operating Limits was updated.
  - (ii) An agreed upon process for determining if a shared Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$ .
- (4) The Reliability Authority shall demonstrate that it can identify the current values of the Interconnection Reliability Operating Limits it monitors and shall show that each of these Interconnection Reliability Operating Limits shall have a  $T_v$  that is smaller than or equal to 30 minutes.



**(e) Levels of Noncompliance**

- (1) Level One: No process for determining if shared Facilities (or groups of Facilities) are subject to Interconnection Reliability Operating Limits and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$ .
- (2) Level Two: No evidence that a shared Facility (or group of Facilities) has an Interconnection Reliability Operating Limit with a  $T_v$  that has been agreed to by all Reliability Authorities that share the Facility (or group of Facilities).
- (3) Level Three: A level three noncompliance occurs if either of the following conditions are present:
  - (i) One or more Interconnection Reliability Operating Limits had a  $T_v$  that was greater than 30 minutes.
  - (ii) No evidence that the list of Facilities (or groups of Facilities) subject to Interconnection Reliability Operating Limits was updated.
- (4) Level Four: A level four noncompliance occurs if either of the following conditions are present:
  - (i) Could not identify the current values of the Interconnection Reliability Operating Limits for its Reliability Area.
  - (ii) No list of Facilities (or groups of Facilities) subject to Interconnection Reliability Operating Limits exists for the Reliability Authority Area.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where financial sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## 202 — Monitoring

### (a) Requirements

- (1) The Reliability Authority shall perform Real-time Monitoring of system operating parameters to determine if its Reliability Authority Area is operating within its Interconnection Reliability Operating Limits.

### (b) Measures

- (1) The Reliability Authority shall have a list of Facilities (or groups of Facilities) subject to Interconnection Reliability Operating Limits available for its operations personnel's Real-time use.
- (2) The Reliability Authority shall have Interconnection Reliability Operating Limits available for its operations personnel's Real-time use.
- (3) The Reliability Authority shall have Real-time Data available in a form that system operators can compare to the Interconnection Reliability Operating Limits.
- (4) The Reliability Authority shall monitor system operating parameters and compare these against its Interconnection Reliability Operating Limits.

### (c) Regional Differences

None identified.

### (d) Compliance Monitoring Process

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep data on limits for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall demonstrate the following upon the request of the Compliance Monitor:
  - (i) System operators actively monitoring and comparing Real-time system operating parameters associated with Interconnection Reliability Operating Limits.

### (e) Levels of Noncompliance

- (1) Level One: Not applicable.
- (2) Level Two: List of Facilities (or groups of Facilities) subject to Interconnection Reliability Operating Limits not available to operations personnel for Real-time use.
- (3) Level Three: Not applicable.

## Operate Within Interconnection Reliability Operating Limits Standard

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- (4) Level Four: A level four noncompliance occurs if any of the following conditions are present:
- (i) Interconnection Reliability Operating Limits not available to operations personnel for Real-time use; or
  - (ii) Real-time Data not available in a form that can be compared to the Interconnection Reliability Operating Limits; or
  - (iii) System operating parameters not monitored and compared against Interconnection Reliability Operating Limits.

### **(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where financial sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## 203 — Analyses and Assessments

### (a) Requirements

- (1) The Reliability Authority shall perform Operational Planning Analyses to assess whether the planned Bulk Electric System operations within its Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits.
- (2) The Reliability Authority shall perform Real-time Assessments to determine if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.

### (b) Measures

- (1) The Reliability Authority shall identify operating situations or events that impact its Reliability Authority Area's ability to operate without exceeding any Interconnection Reliability Operating Limits.
  - (i) The Reliability Authority shall conduct an Operational Planning Analysis at least once each day, evaluating the next day's projected system operating conditions.
  - (ii) The Reliability Authority shall conduct a Real-time Assessment periodically, but at least once every 30 minutes.

### (c) Regional Differences

None identified.

### (d) Compliance Monitoring Process

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall identify the following upon the request of the Compliance Monitor:
  - (i) The time the most recent Operational Planning Analysis was conducted.
  - (ii) Whether the planned Bulk Electric System operations within the Reliability Authority's Reliability Authority Area will exceed any of its Interconnection Reliability Operating Limits.
  - (iii) The time the most recent Real-time Assessment was conducted.
  - (iv) Whether the Real-time Assessment identified if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.

**(e) Levels of Noncompliance**

- (1) Level One: Not applicable.
- (2) Level Two: Not applicable.
- (3) Level Three: A level three noncompliance exists if any of the following conditions are present:
  - (i) No indication that an Operational Planning Analysis was conducted at least once each day.
  - (ii) No indication that a Real-time Assessment was conducted at least once each 30 minutes.
- (4) Level Four: A level four noncompliance exists if either of the following conditions are present:
  - (i) The Reliability Authority could not identify whether the planned Bulk Electric System operations within its Reliability Authority Area is expected to exceed any of its Interconnection Reliability Operating Limits, based on the results of the most recent Operational Planning Analysis.
  - (ii) The Reliability Authority could not identify whether the most recent Real-time Assessment identified if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where financial sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## 204 — Actions

### (a) Requirements

- (1) The Reliability Authority shall, without delay, act<sup>2</sup> or direct others to act to:
  - (i) Prevent instances where Interconnection Reliability Operating Limits may be exceeded.
  - (ii) Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded.
- (2) The Reliability Authority shall include a statement in each Interconnection Reliability Operating Limit-related directive, that informs the recipient that the directive is related to an Interconnection Reliability Operating Limit.
- (3) The Reliability Authority shall document instances of exceeding Interconnection Reliability Operating Limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding Interconnection Reliability Operating Limits for time greater than  $T_v$ .

### (b) Measures

- (1) The Reliability Authority shall have documentation to support each instance where actions were taken or directives were issued to mitigate the magnitude and duration of exceeding an Interconnection Reliability Operating Limit.
  - (i) The documentation shall include the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)
  - (i) The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of one minute.
- (2) The Reliability Authority shall report each instance of exceeding an Interconnection Reliability Operating Limit for time greater than  $T_v$ .
  - (i) The Reliability Authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its Compliance Monitor within five business days of the initiation of the event. (The report shall include the date and time of the event, identification of which Interconnection Reliability Operating Limit was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the Interconnection Reliability Operating Limit, actions taken or directives issued and

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<sup>2</sup> Note that the Reliability Authority is expected to act without delay and may choose to take 'no overt action' and this may be an acceptable action as long as it is documented. Taking 'no overt action' is not the same as ignoring the problem.

the time these were initiated or issued, and an explanation of results of actions or directives.)

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep Interconnection Reliability Operating Limit Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall have the following available upon the request of its Compliance Monitor:
  - (i) Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an Interconnection Reliability Operating Limit and the actions or directives issued for each of these instances.
  - (ii) Interconnection Reliability Operating Limit Violation Reports.

**(e) Levels of Noncompliance<sup>3</sup>**

- (1) Level One: Interconnection Reliability Operating Limit exceeded for a time less than or equal to  $T_v$  and no documentation to indicate actions taken or directives issued to mitigate the instance.
- (2) Level Two: Not applicable.
- (3) Level Three: Not applicable.
- (4) Level Four: Interconnection Reliability Operating Limit exceeded for time greater than  $T_v$ .

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<sup>3</sup> Note that the Reliability Authority is expected to act without delay and may choose to take 'no overt action' and this may be an acceptable action as long as it is documented. Taking 'no overt action' is not the same as ignoring the problem.

**Operate Within Interconnection Reliability Operating Limits Standard**

**(f) Sanctions**

(1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix.

- (i) Level one noncompliance sanctions shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.
- (ii) Level four noncompliance sanctions shall be the greater of the fixed dollar sanctions listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table:

If the Maximum Value % over the Limit (measured after the event duration exceeds $T_v$ ) is: <small>Max Value % = (Max Value/IROL limit - 1)*100</small>	And the event duration exceeds its $T_v$ by ___ minutes:	Then Multiply the Level 4 \$ sanction by:
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	$\text{Duration} > T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	$\text{Duration} > T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	$\text{Duration} > T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	$\text{Duration} > T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	$\text{Duration} > T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	$\text{Duration} > T_v + 15$ minutes	45



## 205 — Data Specification and Collection

### (a) Requirements

- (1) The Reliability Authority shall specify and collect the data it needs to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits. The Reliability Authority shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Authority, and from entities that provide Real-time Facility status to the Reliability Authority. This includes specifying and collecting data from the following:
  - (i) Balancing Authorities
  - (ii) Generator Owners
  - (iii) Generator Operators
  - (iv) Load-serving Entities
  - (v) Reliability Authorities
  - (vi) Transmission Operators
  - (vii) Transmission Owners
- (2) The Reliability Authority shall specify when to supply data (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
- (3) The Reliability Authority shall notify its Compliance Monitor when both of the following conditions are present:
  - (i) An entity that has data needed to support Real-time Monitoring, Operational Planning, or Real-time Assessments relative to operating within the Reliability Authority's Reliability Authority Area has not provided data as specified, and
  - (ii) The Reliability Authority was unable to resolve the issue with the entity responsible for providing the data.

### (b) Measures

- (1) The Reliability Authority shall have a documented specification for data needed to build and maintain models needed to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments relative to Interconnection Reliability Operating Limits.
  - (i) Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.
  - (ii) Specification shall address the data provision process to use when automated Real-time system operating data is unavailable.
- (2) The Reliability Authority shall have evidence that it has distributed its data specification to entities that have Facilities monitored by the Reliability

Authority and to entities that provide Facility status to the Reliability Authority.

- (3) The Reliability Authority shall notify its Compliance Monitor when an entity that has Facilities monitored by the Reliability Authority, or an entity that provides Facility status to the Reliability Authority, does not provide data as specified and the Reliability Authority was unable to resolve the issue with the entity responsible for providing the data.
  - (i) If the Reliability Authority does not receive data as specified, and is unable to resolve the situation, then the Reliability Authority shall notify its Compliance Monitor within five business days of discovering that the data is missing.

### **(c) Regional Differences**

None identified.

### **(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period shall be 12 months from the last violation. The Reliability Authority shall keep its data specification(s) for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The Reliability Authority shall have the following available upon the request of the Compliance Monitor:
  - (i) Data specification(s).
  - (ii) Proof of distribution of the data specification(s).

### **(e) Levels of Noncompliance**

- (1) Level One: Data specification incomplete (missing either the list of required data, a mutually agreeable format, a timeframe for providing data, or a data provision process to use when automated real-time system operating data is unavailable).
- (2) Level Two: No data specification or the specification not distributed to the entities that have Facilities monitored by the Reliability Authority and the entities that provide the Reliability Authority with Facility status.
- (3) Level Three: Not applicable.
- (4) Level Four: Not applicable.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**206 — Data Provision**

**(a) Requirements**

- (1) Each entity performing one of the following functions shall provide data and real-time Facility status, as specified, to the Reliability Authority(ies) with which it has a reliability relationship. The data is limited to data needed by the Reliability Authority to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits.
  - (i) Balancing Authorities
  - (ii) Generator Owners
  - (iii) Generator Operators
  - (iv) Load-serving Entities
  - (v) Reliability Authorities
  - (vi) Transmission Operators
  - (vii) Transmission Owners

**(b) Measures**

- (1) The responsible entity shall have evidence that it has provided data, as specified, to the requesting Reliability Authority, within the timeframe specified, in the mutually agreed upon format.

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The responsible entity shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period is 12 months from the last violation. The responsible entity shall keep data transmittal documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.
- (3) The responsible entity shall have the following available upon the request of the Compliance Monitor:
  - (i) Evidence indicating data was sent to the Reliability Authority or evidence that the entity responsible committed to providing the data identified in the specification.

**(e) Levels of Noncompliance**

- (1) Level One: Not applicable.
- (2) Level Two: Not applicable.
- (3) Level Three: Not applicable.
- (4) Level Four: Data was not provided to the Reliability Authority as specified and the situation was not resolved with the Reliability Authority.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

**207 — Processes, Procedures, or Plans for Preventing and Mitigating Interconnection Reliability Operating Limits**

**(a) Requirements**

- (1) The Reliability Authority shall have one or more processes, procedures, or plans that identify actions it shall take or actions it shall direct others to take, for both prevention and mitigation of instances of exceeding its Interconnection Reliability Operating Limits.

**(b) Measures**

- (1) The Reliability Authority shall have one or more documented processes, procedures, or plans that address both preventing and mitigating instances of exceeding Interconnection Reliability Operating Limits. The processes, procedures, or plans shall identify and be coordinated with those entities responsible for taking actions and with those entities impacted by such actions.

**(c) Regional Differences**

None identified.

**(d) Compliance Monitoring Process**

- (1) The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.
- (2) The Performance-reset Period is 12 months from the last violation. The Reliability Authority shall keep its action plan for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.
- (3) The Reliability Authority shall make the following available for inspection by the Compliance Monitor upon request:
  - (i) Processes, procedures, or plans that address preventing and mitigating instances of exceeding Interconnection Reliability Operating Limits.

**(e) Levels of Noncompliance**

- (1) Level One: Processes, procedures, or plans exist but weren't coordinated with all involved and impacted entities.
- (2) Level Two: Processes, procedures, or plans exist but weren't coordinated with any involved or any impacted entities.
- (3) Level Three: Processes, procedures, or plans exist but do not address both preventing and mitigating instances of exceeding Interconnection Reliability Limits.
- (4) Level Four: No processes, procedures, or plans exist addressing preventing and mitigating instances of exceeding Interconnection Reliability Operating Limits.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## 208 — Reliability Authority Directives

### (a) Requirements

- (1) The Transmission Operator, Balancing Authority, and Interchange Authority shall follow the Reliability Authority's directives to:
  - (i) Prevent instances where Interconnection Reliability Operating Limits may be exceeded.
  - (ii) Mitigate the magnitude and duration of instances where Interconnection Reliability Operating Limits have been exceeded.
- (2) The responsible entity shall document the Reliability Authority's directives and the actions taken.

### (b) Measures

- (1) The responsible entity shall follow the Reliability Authority's directives and shall document the directives and actions taken to meet the directives.
- (2) The responsible entity shall document via an operations log or other data source, the following for each directive it receives relative to an Interconnection Reliability Operating Limit:
  - (i) Date and time of directive received.
  - (ii) Directive issued.
  - (iii) Actions taken in response to directive.

### (c) Regional Differences

None identified.

### (d) Compliance Monitoring Process

- (1) The responsible entity shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint to assess performance.
- (2) The Performance-reset Period is 12 months from the last violation. The responsible entity shall keep its documentation for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.
- (3) The responsible entity shall make the following available for inspection by the Compliance Monitor upon request:
  - (i) Operations log or other data source(s) to show the following for each instance of being issued a Reliability Authority directive relative to an Interconnection Reliability Operating Limit:
    - 1) Date and time of each directive received.
    - 2) Directive issued.
    - 3) Actions taken in response to directive.



**(e) Levels of Noncompliance**

- (1) Level One: The responsible entity followed Reliability Authority's directives relative to preventing or mitigating instances of exceeding Interconnection Reliability Operating Limits but did not document the date and time of each directive received, the directive received, and the actions taken in response to the directive.
- (2) Level Two: Not applicable.
- (3) Level Three: Not applicable.
- (4) Level Four: The responsible entity did not follow the Reliability Authority's directives.

**(f) Sanctions**

- (1) Sanctions for noncompliance shall be applied consistent with the NERC Compliance and Enforcement Matrix. In places where sanctions are applied for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the dollars per megawatt sanctions.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Karl Kohlrus</b>
<b>Organization</b>	<b>City Water, Light &amp; Power</b>
<b>Industry Segment #</b>	<b>5</b>
<b>Telephone</b>	<b>217-321-1391</b>
<b>E-mail</b>	<b>kkohlrus@cwlp.com</b>

- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



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<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b>	<b><i>Group Chair:</i></b> <b><i>Chair Phone:</i></b> <b><i>Chair Email:</i></b>	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments      The minimum voltage of a Bulk Electric System should be 100 KV.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes                       No  
 Comments      The definition of real-time data needs to make reference to how often it is collected (e.g. every 4 seconds) and how quickly it is reported (e.g. every 2 seconds).

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments      In the event that there are different ratings of the same facility, the lower rating should always be used.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments              Some of the more serious violations seemed to have the lesser penalties and vice versa.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

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**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>John Horakh, 04-05-2004</b>
<b>Organization</b>	<b>MAAC</b>
<b>Industry Segment #</b>	<b>2</b>
<b>Telephone</b>	<b>609-625-6014</b>
<b>E-mail</b>	<a href="mailto:john.horakh@conectiv.com">john.horakh@conectiv.com</a>

<p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul>
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<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b>	<b><i>Group Chair:</i></b>	
	<b><i>Chair Phone:</i></b>	
	<b><i>Chair Email:</i></b>	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                      X  No

X  Comments:

The parenthetical portion of the definition is too inclusive in specifying what makes up the “high voltage transmission system”. It requires all lines “above 35 kV or as approved in a tariff filed with FERC” to be included as part of the Bulk Electric System. Many lines that would fit this specification are indeed “transmission” rather than “distribution”, but they may not be part of the BULK transmission, i.e., the transmission that affects the overall reliability of the interconnected systems. Such “non-bulk” transmission lines could be called “subtransmission” or “underlying transmission” or “local transmission”. Many lines above 35 kV fall into this “non-bulk” category. Also, FERC tariff filings may limit lines to voltage levels above 35 kV, but may still contain many “non-bulk” transmission lines in order that such lines may receive proper regulatory treatment. In those cases, an entity would have no choice but to consider those “non-bulk” lines as part of the Bulk Electric System.

The definition should be corrected by either of the following:

- a. Delete the parenthetical portion, OR,
  - b. Change the parenthetical portion to the following –“(above 35 kV or as defined in a publicly available document)”. This would still allow the FERC filing to be used to limit and define the Bulk Electric System, IF APPROPRIATE. If further limiting is needed, this would allow an entity to produce, and make publicly available, another document to define the Bulk Electric System.
2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      X  No

X  Comments:



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The definition implies that Cascading Outages ALWAYS result in 300 MW of load loss for a minimum of 15 minutes. This result is likely, but not 100% sure.

The definition should be corrected by either of the following:

- a. End the sentence with "at any location." and delete the remainder, OR,
  - b. Same as a. above, and add the following sentence – "Cascading Outages will likely have a Wide-Area Impact". Note that Wide-Area Impact is separately defined to include the 300 MW / 15 minute criteria.
3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: The definition uses the expression "networked system load", which implies that "single source fed system load" is excluded. Therefore, we would conclude that the loss of 300 MW or more of "single source fed system load" does not have "Wide Area Impact". Is that the intent of the definition?

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments

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8. Do you agree with the compliance monitoring process?

X  Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

X  Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

X  Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                      X  No

X  Comments: Public posting of IROLs is a market issue, which should be considered in any complementary NAESB standard.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments: Changing to 1 minute gives better assurance of good telemetry and allows for the system to settle more.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes                       No

Comments: The table can be simplified by making four columns for the four "event duration exceeds its  $T_v$ " segments, instead of repeating them six times. The table will then form a six by four grid with the multiplication factors filling the grid.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by                      ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

X  Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
X  No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
X  I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- X Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT. These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then



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the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	
Organization	
Industry Segment #	
Telephone	
E-mail	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group: Operating Reliability Working Group</b>		<b>Group Chair: Scott Moore</b>
<b>Southwest Power Pool</b>		<b>Chair Phone: 614-716-6600</b>
		<b>Chair Email: <a href="mailto:spmoore@aep.com">spmoore@aep.com</a></b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Dan Boezio	AEP	1
Ron Ciesiel	SPP	2
Bob Cochran	SPS	1
Mike Gammon	KCP&L	1
Allen Klassen	Westar	1
Peter Kuebeck	OG&E	1
Mike Stafford	GRDA	1
Robert Rhodes	SPP	2

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes

X No

X Comments

Reference to a voltage class is fine, but the correct voltage class should be referenced. In the Introduction Section of the NERC Planning Standards the definition of Bulk Electric System contains 100 kV as the qualifier. Shouldn't this definition be consistent with this long-standing definition?

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes

X No

X Comments

Using loss of load to imply a cascading event is not a logical link. If the point is to develop a limit for a reportable event, then call it a reportable event not a cascading outage. While this definition does set quantitative limits for cascading outages it doesn't really capture the link to cascading events. We would prefer the previous version of the definition, which while it was not as specific, captured the generic idea of cascading outages better. Trying to define cascading outages discretely may not be possible. Perhaps this definition is best left to the Determine Facility Ratings standard.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes

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X No

X Comments

If IROLs are truly significant interconnection events, then 30 minutes for  $T_v$  is probably a good value. However, if the definition of IROL stays with the proposed limits of 300 MW of load, then 30 minutes may be too short.



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes

X  
No

X Comments

This term does not appear in the standard, why does it need to be defined here?

If it is felt that the definition must be included, then 300 MW is too small to be considered a wide area when compared to the interconnection.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                      X No

X Comments

The definition of an IROL Event Duration lists a reset time of 30 seconds. In 204(b)(1)(ii) the reset period is given as one minute. Whichever the case, 30 seconds or 1 minute is too short of a period for the reset. This should be on the order of 5 minutes or so in order to indicate that stable operating conditions have been attained.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

X Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a

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'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes             No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

We would suggest that the phrase in 201(d)(1) referring to on-site reviews every three years be replaced with on-site reviews as needed.

9. Do you agree with the levels of non-compliance?

Yes             No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

This should be incorporated in the Coordinate Operations standard and doesn't need to be repeated here.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators: (a) The system conditions under which the Interconnection Reliability Operating Limit applies, (b) The contingency that is the basis for the limit, (c) The impact of exceeding the limit	<input checked="" type="checkbox"/> X Yes
	<input type="checkbox"/>

No  Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL	<input checked="" type="checkbox"/> X Yes
<input type="checkbox"/> No <input type="checkbox"/> Comments	

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

Keep the minimum of 30 seconds

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.	<input type="checkbox"/>
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minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

Refer to our comment to Question 5. Something on the order of 5-10 minutes may be a better indicator of true system recovery.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes                      X No  
 Comments

There are no sanctions listed for a Maximum Value over 30%. The last stage should be set at equal to or greater than 25%.

The validity of the table is directly related to the definition of IROL. If an IROL is truly a significant interconnection event, similar in consequences to the August 14 event, then it doesn't matter if the IROL is violated for 5 minutes or 35 minutes, it was violated. If defined properly, a major portion of the interconnection would be jeopardized. If IROL were defined properly, the table would not be needed. Therefore a graduated table may be inappropriate. On the other hand, if IROL is defined as only 300 MW of load loss, then a graduated table may be more fitting.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30

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	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45
$25\% < \text{Max Value \%} \leq 30\%$		

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- X Yes             No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- X Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
X No, I am not a member of the Ballot Pool for this standard  
X Comments

There were both members and non-members of the balloting pool.

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- X I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
X Comments

Depending upon the response to our comments and what revisions are made, we can agree or disagree with the technical content of this standard.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- X I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

An IROL of 300 MW of load loss is too small. Don't lose sight of the fact that an IROL is a significant threat to a large portion of the interconnection. By minimizing the defined threshold for an IROL, the number of IROLs will increase drastically and thereby dilute the significance of the event.

Section 203(b)(1)(ii) requires a real-time assessment at least every 30 minutes. This may be too frequent depending upon the complexity of the studies involved.

Consider reversing noncompliance Levels 3 and 4 in section 203(e). Which of the two levels is worse?

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of



## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Richard Kafka
<b>Organization</b>	Potomac Electric Power Co.
<b>Industry Segment #</b>	3 - LSE
<b>Telephone</b>	(301) 469-5274
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

While FERC may approve nearly any voltage level as “transmission,” that does not qualify the facility as part of the bulk electric system. Regional practices and expected power flows can be used to distinguish between bulk and local electric facilities. The Regional Reliability Council should have authority to part of the bulk electric system if the facility owner does not voluntarily consider a facility to be such.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

Add the term “or has a Wide-Area Impact.”

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments



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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

One minute is a clearer indication that conditions have settled and that telemetry has kept up with actual conditions.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Marv Landauer</b>
<b>Organization</b>	<b>bpa</b>
<b>Industry Segment #</b>	<b>1</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

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**STD Commenter Information (For Groups Submitting Group Comments)**

**Name of Group:**

**Group Chair:**

**Chair Phone:**

**Chair Email:**

**List of Group Participants that Support These Comments:**

<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments This definition, since it relates to IROLs, should not be tied to voltage, rather it should be based on function. I suggest the following: "An individual electric system facility is considered part of the Bulk Electric System if the availability of that element (whether it is in or out) impacts the capacity of an SOL or IROL."

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments This definition might be appropriate for the definition of an IROL but it does not fit with the other uses for the term (such as in the performance table). I suggest that this definition be removed and the words from this definition moved into the definition of an IROL in place of the words "cascading outages".

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      x No

x Comments I do not agree that this is the appropriate definition of wide area impact. However I also do not see that this term is used anywhere in the document, so I suggest that it be removed entirely.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes                       No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes                       No

Comments

8. Do you agree with the compliance monitoring process?

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- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Ken Githens</b>
<b>Organization</b>	<b>Allegheny Energy Supply</b>
<b>Industry Segment #</b>	<b>5</b>
<b>Telephone</b>	<b>412-858-1635</b>
<b>E-mail</b>	<b>kgithen@alleghenyenergy.com</b>

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b>	<b><i>Group Chair:</i></b>	
	<b><i>Chair Phone:</i></b>	
	<b><i>Chair Email:</i></b>	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: We feel that this definition could be interpreted as including all facilities at and above 35kV whether they are transmission or not. The Bulk Electric System should be defined as 100kV and above network transmission system or lower voltage facilities that pass the FERC seven factor test.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: Determining the amount of load loss and restoration time in a pre-contingency study is not possible with the current real-time analysis tools.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments: However, the standard needs to define acceptable risks.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: This definition would qualify the loss of a single industrial customer (greater than 300MWs) as a wide area impact. A wide area impact should be defined as the loss of multiple substations or facilities than result in multiple customer outages totaling 300MWs or greater.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

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Comments: Provided the RA operator can easily determine if the monitored value is within the limit or exceeds the limit and corrective action need to be taken.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201: To determine every scenario that would lead to an IROL's ahead of time is a problem.

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

- Yes                       No  
 Comments: However, under Requirements 203 or 204 would be a better place to include the addition.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments: Remove  $\leq 30\%$  from the last block.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45



**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



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***STD Commenter Information (For Individual Commenters)***

**Name**            **Kathy Davis**  
**Organization**    **Tennessee Valley Authority**  
**Industry Segment #**  
**Telephone**        **423-751-6172**  
**E-mail**            **kadavis@tva.gov**

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
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Regulatory or other Govt. Entities

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**STD Commenter Information (For Groups Submitting Group Comments)**

**Name of Group:**

**Group Chair:**

**Chair Phone:**

**Chair Email:**

**List of Group Participants that Support These Comments:**

<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Mark Creech	Tennessee Valley Authority	
Larry Goins	Tennessee Valley Authority	
Edd Forsythe	Tennessee Valley Authority	
Jennifer Weber	Tennessee Valley Authority	
Jerry landers	Tennessee Valley Authority	
Al Corbet	Tennessee Valley Authority	

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments -**For a large electric system that fluctuates between 15,000 MW to 29,000 MW in any given day, TVA feels that the loss of 300MW would not cause uncontrolled successive loss of system elements. We would prefer a Percentage of System Load rather than a hard number.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

**X Comments - See comments to question 2. Also, if "Wide Area " is implied and not used in this document, why have it at all?**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

**X Comments- Operational Planning Analysis which states "An analysis of the expected system conditions for the next day's operation and up to 12 months ahead."**

**Currently, Reliability Coordinators have responsibility for real-time through next day and Control Areas have Operational Planning responsibilities up to 12 months.**

**Page 6 of the "question and answers" address this definition and it says that the standard requires that an operational planning analysis be conducted at least once each day, looking ahead at the day ahead. But it appears to me that the definition implies more than next day. Maybe this is okay since the measure does limit it to next day.**

**Most of the SERC RCs have responsibility for multiple control areas. TVA for example does operational planning for several months for the TVA control area, but our scope as RC for AECL, BREC, EKPC is real-time through next day.**

**Scope for RC is real-time through next day.**

**There appears to be a shift in responsibility for this operational planning timeframe, if RC = RA.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes       No  
 Comment

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes       No -  
 Comments - **RAs should coordinate and reach agreements for IROLs on joint Facilities. RAs should communicate IROLs that could impact neighboring RAs.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes       No -  
 Comments **We see no value in posting this and it may pose a security risk.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments **"Duration" is ok, but magnitude (maximum value ) should be taken out**

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

Yes       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

**TVA would like to reserve the right to forward additional comments at a later date.**

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners          2 – RTO's, ISO's, RRC's          3 – LSE's          4 – TDU's          5 - Generators          6 - Brokers, Aggregators, and Marketers          7 - Large Electricity End Users          8 - Small Electricity Users          9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Bonneville Power Administration Transmission		<b>Group Chair:</b> James Murphy <b>Chair Phone:</b> 360-418-2413 <b>Chair Email:</b> <a href="mailto:jpmurphy@bpa.gov">jpmurphy@bpa.gov</a>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
James Murphy	BPAT	1
Mike Viles	BPAT	1
Don Gold	BPAT	1
Richard Spence	BPAT	1
Don Watkins	BPAT	1
Marv Landauer	BPAT	1



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments :

The (above 35 kV or as approved in a tariff filed with FERC) should be changed to (200kV and above or as determined by region). This will avoid including many lines that are not part of the Bulk Electric System, but if they are significant the Regions can add them into consideration for IROL's

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments:

There is a concern with some at BPA that the Definition of Cascading Outages will affect other standards. Specifically the use of "300 MW or more of networked system load for a minimum of 15 minutes" will not work with other standards. It has been suggested to use the current definition for Cascading Outages be used in the IROL definition.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$  :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments:

Remove definition if it is no longer used.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments

IROL: "system operating limit" should be capitalized.

IROL Event Duration: The time frame should match the standard, definition says 30 seconds, standard says 1 minute (204b1ii). There are two I in (204b1)

Please include the SOL definition.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes                       No

Comments

This should be covered in the coordinate operations standard (#100).

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of

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requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes  No

Comments

It should be made clearer that the IROL facilities can be dynamic also. Some read this as only dynamic IROL values. Implementation plan will also need to change to reflect this update.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

This should be covered in the coordinate operations standard (#100).

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments

BPAT believes there is no reliability-related reason to publicly post IROL's, in fact it may be a security issue.

12. Other comments about Requirement 201:

201 (d) & (e) (3) (ii) need to be changed to correspond more with (b) (1) (i). Which includes adding "to reflect changes in its Reliability Authority Area's system topology.

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

We agree if (c) is omitted. We believe it would be unrealistic to give the system operators the impact of exceeding the limit for every scenario.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

We agree with either 30 seconds or 1 minute, but 10 minutes is too long.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

We would agree with the table if the sanctions were applied to the appropriate entity. It seems unfair if the sanctions are applied to the RA if TOP did not follow the RA directive fast enough or not at all. One suggestion would require the RA to issue directive within 5 minutes. Below are some possible scenarios where IROL has been violated past  $T_v$ . These may be an over simplification, but it may be a good place to start.

Scenario 1: RA issues directive in 5 minutes, the TOP does not follow directive fast enough or not at all, TOP gets sanction.

Scenario 2: RA issues directive in 5 minutes, the TOP does follow directive fast enough, but directive did not solve problem, RA gets sanction.

Scenario 3: RA issues directive past 5 minutes, RA gets sanctions.

It has also been suggested in BPAT's group that a one time and one time only pass on the sanctions for the first ever offense, or some kind of phase in of the sanctions. This would be to recognize that there maybe some growing pains in implementing this standard for the first time

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30

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15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

Question 19 Comments: BPAT may or may not vote against this standard based on changes to the Functional Model and based on the structure of the Financial Sanctions. BPAT has not determined this yet.

BPAT would like the system operator to be identified as RA system operators were applicable. 202(b)(3) & 202 (d)(3)(i)

In section 200 (2) please identify the name of section 604 where used.

Please add the standard number when other standards are mentioned.

Please include in 208 (d) (3)“(4) Time the actions were taken. This may be important to determine if directive were followed in a timely manner.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b> NPCC, CP9-Reliability Standards Working Group	<b><i>Group Chair:</i></b> Guy Zito <b><i>Chair Phone:</i></b> 212-840-1070 <b><i>Chair Email:</i></b> <a href="mailto:gzito@npcc.org">gzito@npcc.org</a>	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
Ralph Rufrano	New York Power Authority (NYPA)	1
David Kiguel	Hydro One Networks Inc.	1
Roger Champagne	Hydro-Quebec TransÉnergie	1
Greg Campoli	New York ISO (NYISO)	2
Peter Lebro	National Grid	1
Kathleen Goodman	ISO New England (ISO-NE)	2
Dan Stosick	ISO New England (ISO-NE)	2
Al Adamson	New York State Reliability Council (NYSRC)	2
Khagan Khan	The Independent Electricity Market Operator (IMO) Ontario	2
Brian Hogue	Northeast Power Coordinating Council	2
Guy Zito	Northeast Power Coordinating Council	2



### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

This definition should be reliability-“performance based” and references to tariffs should be removed. The existing NPCC Definition for its **Bulk Power System** is;

“The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.”

Furthermore NPCC CP9 members listed feel that in no instance should a BES criteria encompass facilities at voltage levels less than 115 kV and strongly urges the eventual adoption of a “performance based” definition not a “voltage based” one.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

An event characterized by one or more of the following phenomena:

- the loss of **power** system **stability**
- cascading outages of circuits
- oscillations; abnormal ranges of frequency or voltage or both.

NPCC participating members of CP9 feel it is not the threshold of 300 MW that qualifies an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn’t necessarily pose a risk to the interconnection. We believe that the standard specify that the cascading outages not propagate beyond the local area (i.e. Control Area).Moreover, the definition of “Cascading Outage” as outlined in Standard 200 is different from

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that defined in Standard 600 (Develop Facility Ratings, ...). It is recommended to follow a common definition as given in Std 600, including a minor modification, as follows. i.e.”

**“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area’s) boundaries.”**

In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

NPCC participating CP9 members participating agree that the  $T_v$  should be limited to 30 mins. However the last sentence should read  $T_v$  shall not be greater than 30 minutes.

Add discussion to Q&A document to give rationale as to why  $T_v$  under 30 minutes is required.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

It is proposed that the definition of Widespread Area from NERC OLDTF Report (that was validated by RCWG at its December/03 meeting and was accepted by NERC OC at its March 2004 meeting) be used in the Standard 200 as well. It is stated as below:

**Widespread Area** An area that extends beyond any LOCAL AREA.

**Local Area** The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.

OR an alternative option/suggestion is also proposed as follows:

“The impact of an incident resulting in uncontrolled successive loss of system elements in networked system and where the consequences of such significant adverse impact cannot be contained within a defined area that can be demonstrated by studies.

Wide area impact may also be defined correlating it to occurrences of event impacting more than one Reliability Authority.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2). As an example, there is an inconsistency in definition of Transmission Operator, i.e. Definition of Transmission Operator should be updated to reflect definition stated in version 2 of the Functional Model – i.e. “operates or directs the operation”.

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Definitions should be in one place not in each standard and definitely should not appear if they are in the Functional Model document.

The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Std 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“ A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

### Questions about Requirement 201 — IROL Identification

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

Concern exists that the process required may be too formalized and could be a simple email or telephone call that requires affirmation and a formal legal agreement should not be required.

### Questions about Requirement 201 — IROL Identification, continued

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLS can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLS, the RA must be able to identify the ‘current value’ of its IROLS. Do you agree with this change?

- Yes                       No  
 Comments

While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. Also refer to comments given in question 13.

In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

NPCC participating members of CP9 doesn’t agree with having a list of facilities.

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Also, what constitutes evidence that a list was updated from an auditing perspective? The requirements need to be clear as to what exactly is needed.

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

What constitutes evidence that a list was updated from an auditing perspective?

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

Although this a desirable addition, it should consistently appear throughout the document.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standards.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes

No!

Comments

We support Mr. Gent's comments to the NERC BOT that monetary sanctions are ineffective to ensure compliance and that market mechanisms and letters of increasing severity are more effective.

There is an issue with the concept of a monetary sanction matrix and what its implications are. NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. NPCC has indicated that any posted Standard, with such a matrix, will not be supported by NPCC, or its members. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and NPCC will continue to work to oppose monetary sanctions.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25

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	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45



**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard(NPCC Members of CP9 expressed concern over these questions 18-19-and 20. The answers to them are more "process" related than standard related and seem inappropriate. Are differing weights assigned to persons, and their answers, who are not voting in the pool? These questions could raise issues about the process being open and inclusive.)**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

21. Other Comments about this Standard:

The footnote on Std 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities” i.e. Std 600. Such requirements with respect to IROL are not mentioned in Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.

Owing to the fact that “ $T_v$ ” value can be smaller than 30 minutes, it is suggested to update the sub-section 203 (b) (ii) as follows: “ The Reliability authority shall conduct a Real-time Assessment periodically, once every 30 minutes or lesser as applicable in order to capture the allowable lesser duration  $T_v$ s.

General comment on the standard is it seems overly burdensome with documentation and less focused on performance.

Examples regarding the individual definitions might be helpful to be added in an accompanying document.

The Standard should address repeated, planned IROL violations that don't exceed or consistently approach  $T_v$  and preventing this/discouraging this mode of operation from reoccurring. **It is not OK to exceed IROLs** and there are entities that frequently exceed them for short periods of time for economic or other reasons, they are not reportable because they do not exceed  $T_v$ . This behavior must be discouraged through measurement of frequency and severity of IROL through the reporting mechanisms outlined in this standard, and as outlined in new template P2 T1 “*System Operating/IROL Violations*”. In addition, there were no IROL  $T_v$  violations reported to NERC as a result of the events occurring on August 14<sup>th</sup> 2003 which implies either more stringent reporting is required or the IROL and  $T_v$  limit needs to be reevaluated.

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Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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***STD Commenter Information (For Individual Commenters)***

**Name**

**Organization**

**Industry Segment #**

**Telephone**

**E-mail**

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

**STD Commenter Information (For Groups Submitting Group Comments)**

**Name of Group:** SERC Operations  
Planning Subcommittee

**Group Chair:** Don Reichenbach  
**Chair Phone:** 704-382-3146  
**Chair Email:** dereiche@duke-energy.com

**List of Group Participants that Support These Comments:**

<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Carter Edge	Southeastern Power Administration	4 & 5
William Gaither	South Carolina Public Service Authority	1
Ken Skroback	Alabama Electric Cooperative	1
Roger Brand	Municipal Electric Authority of Georgia	1
Phil Creech	Progress Energy - Carolinas	1
Gene Delk	South Carolina Electric and Gas	1
Al McMeekin	South Carolina Electric and Gas	1
Randy Hunt	Dominion-Virginia Power	1
Doug Newbauer	Georgia System Operations	1
Mike Clements	Tennessee Valley Authority	1
Don Reichenbach	Duke Energy	1
Lynna Estep	SERC	2
Dan Kay	South Mississippi Electric Power Association	1
Matt Ansley	Southern Company	1
Uma Gangadharan	Entergy	1

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments We believe that 35 kV is too low for the Bulk Electric System. A more appropriate level would be 100 kV and above.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments The MW amount should not determine whether it is a cascading outage. New definition proposal: The uncontrolled successive loss of networked system elements triggered by an incident at any location.

In response to the second paragraph above for question 2, we do not believe that the 300 MW/15 minute criteria should be used to automatically determine IROL Violations. However, reporting requirements could be based on this criteria with after the fact analyses to determine if an actual IROL violation occurred.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments See comments above

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments Uncontrolled separation – Cascading outages (new proposed definition above) that lead to the unplanned break-up of an interconnection.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes             No  
 Comments It would be beneficial to stress that updating the list of facilities should be done continuously to reflect real-time conditions.

8. Do you agree with the compliance monitoring process?

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Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments We are a group and some members represent members of the Ballot Pool.

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>	
<b><i>Name of Group:</i></b> MAPP Regional Reliability Council, assisted by its Operating and Planning Subcommittee members listed below.	<b><i>Group Chair:</i></b> Lloyd Linke <b><i>Chair Phone:</i></b> 605-882-7500 <b><i>Chair Email:</i></b> Lloyd@wapa.gov

<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
<i>Darrick Moe</i>	<i>WAPA</i>	<i>2</i>
<i>John Swanson</i>	<i>NPPD</i>	<i>2</i>
<i>Paul Koskela</i>	<i>MP</i>	<i>2</i>
<i>Larry Larson</i>	<i>OTP</i>	<i>2</i>
<i>Dick Pursley</i>	<i>GRE</i>	<i>2</i>
<i>Martin Trence</i>	<i>XCEL</i>	<i>2</i>
<i>Todd Gosnell</i>	<i>OPPD</i>	<i>2</i>
<i>Robert Coish</i>	<i>MH</i>	<i>2</i>
<i>Joe Knight</i>	<i>MAPPCOR</i>	<i>2</i>
<i>Tom Mielnik</i>	<i>MEC</i>	<i>2</i>
<i>Dave Jacobson</i>	<i>MH</i>	<i>2</i>
<i>Delyn Helm</i>	<i>GRE</i>	<i>2</i>
<i>Jason Weiers</i>	<i>OTP</i>	<i>2</i>
<i>Dennis Kimm</i>	<i>MEC</i>	<i>2</i>



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

Portions of the transmission system that are operated radially below 100 kV should be excluded to avoid excessive data reporting that may be required for other standards that use this definition.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

The definitions of SOL, IROL, Local Area and Widespread area used in the NERC Operating Limit Definitions and Reporting document approved at the March 23 NERC OC meeting should be used instead of incorporating DOE definitions.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

See comments associated with question 2.

5. The definitions of SOL, IROL, Local Area and Widespread area used in the NERC Operating Limit Definitions and Reporting document approved at the March 23 NERC OC meeting should be used instead of incorporating DOE definitions. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

What is the maximum update interval for Real-time Data?

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

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Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments:

There are inconsistencies, for instance IROL Identification –no list of facilities subject to IROLs is level 4; Monitoring- List of facilities subject to IROLs not available for Real-time use is level 2.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments:

This would help all entities confirm that the correct value is being used. However, confirm that public posting means posting on the OASIS in an area that registered market participants can access. For national security reasons, these values should not be posted on a web site that any Internet user can access.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No
  Comments

There should be no dollar amounts in the sanctions.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments: Some are members of the ballot pool.

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments: This is not applicable to a group.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

The group cannot respond to this for the individuals.

20. Other Comments about this Standard:

We support the prerequisite approval provided on page 2 for the implementation plan of this Standard 200 in which Standard 600 Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard must be implemented before this standard can be implemented. However, we believe that another prerequisite approval is that the NERC SAC verify that this Standard 200 does not conflict with Standard 600. Otherwise, there will be problems in implementing the two standards. If the SAC determines there is a conflict, then the SAC should send one or both standards back to the drafting teams to be resolved.

The dollar sanctions should be removed from all sections of this standard. The sanctions sections should be replaced with:

- (1) Sanctions for noncompliance shall be applied consistent with the NERC compliance and enforcement matrix, but no financial penalties shall be enforced. Noncompliance sanctions shall consist of letters, issued in accordance with the matrix.





## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	Lawrence T. Hochberg
<b>Organization</b>	New York State Reliability Council (NYSRC)
<b>Industry Segment #</b>	2
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b>	<b><i>Group Chair:</i></b>	
	<b><i>Chair Phone:</i></b>	
	<b><i>Chair Email:</i></b>	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>

### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

This definition should be reliability “performance based” and references to tariffs should be removed. The existing NPCC definition for its **Bulk Power System** is:

“The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.”

Furthermore, the New York State Reliability Council (NYSRC) feels that in no instance should a BES criterion encompass facilities at voltage levels less than 115 kV and strongly urges the eventual adoption of a “performance based” definition.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

An event characterized by one or more of the following phenomena:

- the loss of **power** system **stability**
- cascading outages of circuits
- oscillations; abnormal ranges of frequency or voltage, or both.

The NYSRC feels it is not the threshold of 300 MW that qualifies an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn’t necessarily pose a risk to the interconnection. We believe that the standard specify that the cascading outages not propagate beyond the local area (i.e. Control Area). Moreover, the definition of “Cascading Outage” as outlined in Standard 200 is different from that defined in draft Standard



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600 (Develop Facility Ratings, ...). It is recommended to follow a common definition as given in Standard 600, including a minor modification, as follows:

**“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area’s) boundaries.”**

In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

The NYSRC agrees that the  $T_v$  should be limited to 30 minutes. However, the last sentence should read “ $T_v$  shall not be greater than 30 minutes”.

We suggest that discussion in the Q&A document be added to include the rationale as to why  $T_v$  under 30 minutes is required.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

It is proposed that the definition of "Widespread Area" from the NERC OLDTF Report (that was validated by RCWG at its December 2003 meeting and was accepted by NERC OC at its March 2004 meeting) be used in Standard 200 as well. It is stated as below:

**Widespread Area** An area that extends beyond any LOCAL AREA.

**Local Area** The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.

OR an alternative option/suggestion is also proposed as follows:

"The impact of an incident resulting in uncontrolled successive loss of system elements in networked system and where the consequences of such significant adverse impact cannot be contained within a defined area that can be demonstrated by studies."

Wide Area Impact may also be defined correlating it to occurrences of an event impacting more than one Reliability Authority.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes                       No  
 Comments

The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2). As an example, there is an inconsistency in the definition of Transmission Operator, i.e., the definition of Transmission Operator should be updated to reflect the definition stated in version 2 of the Functional Model, i.e., "operates or directs the operation".

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Definitions should be in one place, not in each standard, and definitely should not appear if they are in the Functional Model document.

The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Standard 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

### Questions about Requirement 201 — IROL Identification

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

Concern exists that the process required may be too formalized and could be a simple e-mail or telephone call that requires affirmation, and a formal legal agreement should not be required.

### Questions about Requirement 201 — IROL Identification, continued

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLs, the RA must be able to identify the ‘current value’ of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

While the standard considers the requirements that IROLs can be dynamic, it also needs to provide guidance to operators to identify IROLs as they occur. Also, refer to comments given in question 13.

In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

The NYSRC doesn’t agree with having a list of facilities.

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Also, what constitutes evidence that a list was updated from an auditing perspective? The requirements need to be clear as to what exactly is needed.

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

What constitutes evidence that a list was updated from an auditing perspective?

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in Standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

Although this is a desirable addition, it should consistently appear throughout the document.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standard.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes

No!

Comments

The NYSRC is opposed to monetary sanctions as the only option for dealing with noncompliance as applied in this and other proposed NERC Standards. Unfortunately, direct monetary sanctions invite “gaming the system”, and encourage “business” decisions based on potential profits or savings versus potential penalties. Instead of monetary sanctions, the NYSRC prefers that NERC have the authority to issue letters of increasing degrees of severity to communicate noncompliance of mandatory standards. The NYSRC and NPCC now rely on a more stringent and mandatory process than monetary sanctions to assure compliance with reliability standards. Compliance is now mandatory through the contractual agreements and tariffs that all participants need in order to conduct business. The use by the NYSRC and NPCC of letters to regulatory agencies and other oversight bodies for reporting noncompliance has demonstrated that letter sanctions are a more effective tool for ensuring adherence to standards. Such letters establish the basis for liability in the event of a subsequent criterion violation, and in the case of market participant noncompliance, threaten the violator’s ability to do business with or through an ISO or RTO. Moreover, letters that communicate noncompliance best allow focus on the “root cause” of a violation, as well as its reliability impact.

Therefore, the NYSRC recommends that this and other NERC Standards expressly provide that letter sanctions be used in addition to or instead of monetary sanctions under circumstances in which they would be an equally or more effective enforcement mechanism.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	$\text{Duration} > T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	$\text{Duration} > T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25

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	Duration > T <sub>v</sub> + 15 minutes	30
15% < Max Value % ≤ 20%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	20
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	25
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	30
	Duration > T <sub>v</sub> + 15 minutes	35
20% < Max Value % ≤ 25%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	25
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	30
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	35
	Duration > T <sub>v</sub> + 15 minutes	40
25% < Max Value % ≤ 30%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	30
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	35
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	40
	Duration > T <sub>v</sub> + 15 minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

21. Other Comments about this Standard:

The footnote on Standard 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities”, i.e., Standard 600. Such requirements with respect to IROL are not mentioned in Standard 600, and it is expected that the upcoming revised standard will include this requirement; otherwise, it is recommended to delete the keynote from Standard 200.

Owing to the fact that the “T<sub>v</sub>” value can be smaller than 30 minutes, it is suggested to update the sub-section 203 (b) (ii) as follows: “The Reliability authority shall conduct a Real-Time Assessment periodically, once every 30 minutes or lesser, as applicable, in order to capture the allowable lesser duration T<sub>v</sub>s.

A general comment on the standard: It seems overly burdensome with documentation and less focused on performance.

Examples regarding the individual definitions might be helpful if added in an accompanying document.

The Standard should address repeated, planned IROL violations that don’t exceed or consistently approach T<sub>v</sub> and preventing this/discouraging this mode of operation from reoccurring. **It is not OK to exceed IROLs.** There are entities that frequently exceed them for short periods of time for economic or other reasons which are not reportable because they do not exceed T<sub>v</sub>. This behavior must be discouraged through measurement of frequency and severity of IROL through the reporting mechanisms outlined in this standard, and as outlined in new template P2 T1 “*System Operating/IROL Violations*”. In addition, there were no IROL T<sub>v</sub> violations reported to NERC as a result of the events occurring on August 14, 2003, which implies either more stringent reporting is required or the IROL and T<sub>v</sub> limit need to be reevaluated.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.





**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

The definition of Bulk Electric System seems to be hard to pin down. We suggest:

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical ~~generation resources and~~ high voltage transmission ~~system facilities above 100 kV and associated equipment, (above 35 kV or as approved in a tariff filed with FERC), and generation resources connected to that transmission system.~~

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

Cascading Outages is another term that is hard to define. Cascading Outage should be define in terms of the successive loss of system elements for which we suggest the definition be changed to:

**Cascading Outages:** The uncontrolled successive loss of networked system elements triggered by an incident at any location that results in the operation of more than 4 relays and the loss ~~of 300 MW or more~~ of networked system load for a minimum of 15 minutes.

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3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

We suggest the definition of Wide Area Impact should include a number of transmission providers, rather than MWs of load, and propose the following:

**Wide Area Impact:** The impact of a single incident resulting from the uncontrolled loss of networked system elements involving two or more transmission providers triggered by an incident at any location that results in the uncontrolled loss ~~of 300 MW or more~~ of networked system load for a minimum of 15 minutes.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

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7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes                       No  
 Comments

There have been several changes to the Requirements and Measures of 201 and we are unsure to which change this question refers. Therefore, we can not agree with the change at this time.

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

Entergy agrees with multipliers, but they should only be applied to repeat offenders. NERC should use multipliers if the same event occurs without remediation, or if different events pop up with the same systemic cause.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40

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25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
Name	Bill Thompson
Organization	Dominion
Industry Segment #	
Telephone	
E-mail	

<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b> Chair Phone: 804 273 3300 Chair Email:	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Jalal Babik	Dominion VA Power	1
Craig Crider	Dominion VA Power	1
Jack Kerr	Dominion VA Power	1
Bill Thompson	Dominion VA Power	1



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes  No

**Comments:** By this definition, a Bulk Electric System could be as small as the transmission system covered by the OATT of the smallest "electric utility". This interpretation is not consistent with the usage of the term in the definition of IROL that appears in the revised Policy 9 currently being balloted by the Standing Committees.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes  No

**Comments:** The narrow definition may cause some issues for the operators, depending on how this standard is applied, and whether planned maintenance and a contingency becomes an issue under transfer conditions. The key will be if you can get out of the condition quickly-i.e. 30 minutes.

If the cascading outages definition trickles over to the Planning side or to other Operations Standards, it could mean extra expenditures for the company. There are a number of places where double contingencies can cause large loss of load, but not cascading as defined as follows:

**Cascading (planning definition/old ops definition):** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies

This definition gives much leeway. As long as you studied it, and you can tell how far the interruption spreads, it is not cascading. We could lose Northern Virginia or South Hampton Roads and still be in compliance. The loss of both 500 kV feeds to Yadkin and Fentress would drop over 300 MW.

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3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

- Comment: **See item 2 comments. Also, a dynamic instability can cause power system oscillations and equipment "swinging" over a large part of an interconnection and yet result in no loss of load. This situation could be caused by a single incident such as loss of a long line or a malfunction of a power system stabilizer and would definitely be considered to have a wide area impact on the reliability of the interconnection and the safety of interconnected equipment. The proposed definition is not applicable. The definition of Wide Area Impact is not consistent with the definition of Wide Area that appears in the revised Policy 9 currently being balloted by the Standing Committees.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

- Comments: **The definition of IROL in this standard, "A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk electric system.", is not consistent with the definition in the revised Policy 9 currently being balloted by the Standing Committees, "The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of the SYSTEM OPERATING LIMITS, which if exceeded, could expose a widespread area of the BULK ELECTRIC SYSTEM to instability, uncontrolled separation(s) or cascading outages". The definition in this standard loses the concept of wide area.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

**I agree with the levels for actual operating events, but don't agree with the concept that a newfound definition of an IROL would result in a level 4 under "IROL Identification." In fact, for first time offenses under the heading of "IROL Identification," there should be no monetary fines. My concern is based on disagreement with the definition proposed here.**

**I also disagree with the levels and associated fines under "Analyses and Assessments" since it implies that for one miss of a successful state estimator/contingency analysis run there could be a fine. I want NERC to issue minimum standards for the real-time analysis function that should specify a mean time between failures or to define a maximum allowable downtime for the operation. This is discussed in the US/Canada Task Force Recommendations under number 22. Requiring a maximum 30-minute failure, as this standard appears to do, is getting ahead of ourselves in establishing requirements.**

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments: **The Transmission Owner is responsible for establishing facility ratings for its equipment. The RA function is to monitor the**

**system according to the TO's System Operating Limits. There is no need to publicly post the IROLs.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

**See comments under items 1, 2, 4, 5, 9, and 11.**

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

**The Board approved a new compliance template that applies to the issues covered by this proposed standard on April 2, 2004. The compliance template that is now approved conflicts with the compliance presented here. I want to know where this is heading. Also see comments under item 9.**

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

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<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
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<b>Industry Segment #</b>	2
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	<b>Chair Phone:</b>	
	<b>Chair Email:</b>	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: Please drop the parenthetical expression as it is not applicable in Canada – we would ask NERC and the industry to develop “standard” definitions of the common terms to be used by the all standard-drafting teams. Could we use the definition of transmission out of FERC Order 888?

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The definition should read as follows: The uncontrolled successive loss of Bulk Power Transmission elements that propagate beyond a balancing area’s boundaries and have adverse impacts of system frequency, load served, or voltage.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: **Wide Area Impact should be defined in relation to a BA footprint. The measure should be that a wide area event occurs when an event has an impact in two or more BA areas.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments: **A definition of "shared facilities" is requested.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments:

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments

8. Do you agree with the compliance monitoring process?

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Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments: **The CAISO supports financial penalties for non-compliance and recognizes that these penalties should be greater than any potential economic advantage to violating a standard.**

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments: **We feel that using a common number for a limit at a boundary or "joint facility" is basic to the reliability of the system. Having a path operated to two different numbers leads to one side potentially scheduling more than the other side can accommodate and can result in "real-time" disagreements and curtailments that should have been handled in the day-ahead scheduling process.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments: **What does "made public" mean? All RAs should be aware of all IROLs but this information may not be appropriate for the "general public". There is a concern over infrastructure security and some concern voiced by a CIPC member.**

12. Other comments about Requirement 201: **None**

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **All directives issued by an RA must be followed without question, no matter what the circumstances. The explanations can be provided after actions have been taken and the problem solved. While we agree that if time permits a reason should be provided, the directive must be followed whether or not a reason is provided.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments: **The CAISO would like to see a value remain below its limit for two minutes with the understanding that if the value remains below the limit for two**

minutes, the reported end of the event or violation occurs at the time the value actually dropped below the limit.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments:

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard:** Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

17. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

19. Other Comments about this Standard:



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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Alan Gale
<b>Organization</b>	City of Tallahassee
<b>Industry Segment #</b>	5
<b>Telephone</b>	(850) 891-3025
<b>E-mail</b>	galea@talgov.com

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners          2 – RTO's, ISO's, RRC's          3 – LSE's          4 – TDU's          5 - Generators          6 - Brokers, Aggregators, and Marketers          7 - Large Electricity End Users          8 - Small Electricity Users          9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	Chair Phone:	
	Chair Email:	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Rusty Foster	City of Tallahassee	3

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes             No

Comments

Suggested Definition:

**Bulk Electric System:** A term commonly applied to the portion of the electric system used in the transport of power in inter-utility transactions.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No

Comments

Suggested Definition:

**Cascading Outages:** The uncontrolled successive loss of additional elements outside of normal relaying schemes triggered by an incident at any location that results in the loss of 300MW or more of FIRM customer load.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes             No

Comments

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When would the clock start? When the SOL is reported, after the RA determination that it is an IROL, or after the RA tells the reporting entity that it is an IROL? I recommend not starting the 30 minute clock until after the RA determines it is an IROL.

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes             No  
 Comments: There is no verbiage in the Requirements section to indicate this change, similar to the changes made in Measure (2) and Non-Compliance level 4(i).

8. Do you agree with the compliance monitoring process?

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Yes       No

**X** Comments:

There should be some consistency across all the standards for time frames of “requested data”. Without it, the Compliance Monitor can not receive the necessary data for a month and the reporting entity can still be compliant.

9. Do you agree with the levels of non-compliance?

Yes       No

**X** Comments:

There should be some consistency across all the standards for time frames of “reviewing or updating”. Without it, an entity can only review its documents and programs “at will” and still be compliant.

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes       No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes       No

**X** Comments:

This information can be considered secure Critical Infrastructure Information, as well as Market Sensitive, and should not be publicly posted.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

Yes       No

Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes

Comments:

Changes here may require looking at the sanctions table and the definition of  $T_v$ . **Two minutes** will ensure the IROL is truly mitigated and not the result of telemetry or integration errors. 5 or 10 minutes may result in exceeding  $T_v$  time limits when the IROL has been mitigated.

16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be **the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.**

Do you agree with this table?

- Yes       No  
 Comments

Although I agree with the need to increase the penalty to coincide with the magnitude of the violation, these proposed quantities could result in fines that would significantly impact utility operating budgets, customer rates, and even solvency. The starting point is not defined, but a \$1,000 fine that could go to a \$40,000 fine or a \$4,000 fine going to a \$160,000 is a big jump. The reason the IROL was exceeded needs to be addressed. Was it exceeded due to an "Act of

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God”, an N-2 event, a willful violation of procedures, or the refusal to invest in necessary system repairs and upgrades? The difference should be addressed, possibly with a maximum fine.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds T<sub>v</sub>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its T<sub>v</sub> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	5
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	10
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	15
	Duration > T <sub>v</sub> + 15 minutes	20
5% < Max Value % ≤ 10%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	10
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	15
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	20
	Duration > T <sub>v</sub> + 15 minutes	25
10% < Max Value % ≤ 15%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	15
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	20
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	25
	Duration > T <sub>v</sub> + 15 minutes	30
15% < Max Value % ≤ 20%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	20
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	25
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	30
	Duration > T <sub>v</sub> + 15 minutes	35
20% < Max Value % ≤ 25%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	25
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	30
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	35
	Duration > T <sub>v</sub> + 15 minutes	40
25% < Max Value % ≤ 30%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	30
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	35
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	40
	Duration > T <sub>v</sub> + 15 minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

Yes       No  
 Comments

**Other Questions about this Standard**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments: I agree with the technical content as amended by my comments. I will reserve judgment until I see how they are incorporated.

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

21. Other Comments about this Standard:

- The Compliance Monitoring Process for 202-208 requires that certain information be provided to the Compliance Monitor “upon request”. There should be some consistency across all the standards for time frames of “requested data”. Without it, the Compliance Monitor can get the run around for a month and the reporting entity can still be compliant.
- 203
  - Requirements and Measures - Although not specified in the Requirements, the Measures requires an Operational Planning Analysis at least once each day for the “projected system operating conditions”. This would preclude a “day ahead” analysis of the weekend (or holiday) from being performed on Friday. A provision should be made that would allow this. Trigger a required analysis if system conditions differed from the analyzed conditions. (i.e. a line was planned to be out Saturday only, but remains out on Sunday would trigger a new analysis. If the line was back in, it would not require an analysis be done on Saturday for Sunday, the analysis on Friday would remain valid.)
- 204
  - Requirements
    1. Who is responsible for implementing an IROL mitigation plan? Transmission Owner? RA? Does the RA develop the plan or the Transmission Owner?
    2. Footnote 2 indicates the no action “may be acceptable as long as it is documented”, what type of documentation is required?
    3. If “no overt action” is acceptable, is it an IROL?
- 205
  - Measure (3)(i) should be revised to indicate that the Compliance Monitor should be notified within five business days of determining the data issue could not be resolved.
  - Non-compliance levels – Why is there a Level 1 and Level 2, rather than Level 3 and Level 4. It appears that this information is very important to maintain a reliable system. In addition, if there is a measure for notifying the Compliance Monitor when data issues cannot be resolved, a level of non-compliance should be included when this notification is not provided.
- 206
  - Non-Compliance Level 4 - Should be revised to separate “not providing the data” from the “inability to resolve the issue”. The inability to send the data due to a technical problem that is being upgraded should be differentiated from the refusal to



provide the data (“inability to resolve”). This will allow a lower level of non-compliance while pursuing any necessary equipment or technology upgrades.

- 207
  - Requirements and Levels of Non-Compliance – from this it appears that the Reliability Authority will work with other entities to develop processes, procedures, and plans, but the levels of non-compliance indicated that these activities could be developed with no input. What good is this if an Reliability Authority can’t perform the mitigation? Seems very broad and burdensome to the Reliability Authority.
  - There should be some consistency across all the standards for time frames of “reviewing or updating”. Without it, an entity can only review its documents and programs “at will” and still be compliant
- 208
  - Requirements - The standard does not address seams issues. Although 201 requires Reliability Authorities that share facilities to develop IROL procedures and lists, there needs to be a requirement included that would allow one Reliability Authority to give directives to another Reliability Authority.
  - Levels of Non-Compliance – If an entity does not follow the Reliability Authority directive, and the Reliability Authority does not have the ability to take action, other than the financial penalty there is no way to make entities comply with directives and reliability will be jeopardized.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Southern Generation and Energy Marketing, SCGEM		<b>Group Chair:</b> Roman Carter <b>Chair Phone:</b> 205-257-6027 <b>Chair Email:</b> jrcarter@southernco.com
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Roman Carter	SCGEM	5,6
Joel Dison	SCGEM	5,6
Tony Reed	SCGEM	5,6
Lloyd Barnes	SCGEM	5,6
Clifford Shepard	SCGEM	5,6
Lucius Burris	SCGEM	5,6
Roger Green	SCGEM	5



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes       No

Comments:

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments:

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments: ***all are improved and acceptable***

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments : **This requirement seems to overlap the requirements in the Coordinate Operations standard. The two standards should be coordinated to avoid unnecessary repetition.**

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments

8. Do you agree with the compliance monitoring process?

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Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments : **The Standard already states that RAs that share a facility, having an IROL, will agree to a 'process' for determining if it qualifies and what the value should be. Being more prescriptive doesn't add anything here.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
x Comments: Certain limit information can be beneficial to the Wholesale Market. By including appropriate levels of viewing restrictions, passwords, and security screens, etc., it could be posted without harm to physical security.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **This helps to identify the message as to relate to an IROL.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
Comments;

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments:

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard: **We would like to express our appreciation to the SDT for taking the time and trouble to revisit the comments on this standard. We realize the time it takes to participate on these teams and the dedication to it. While the last version of this standard was voted down this version is greatly improved and should pass the test. Thank you all for your efforts to listen to the industry and the people who operate the power systems on a daily basis and making this a workable product. We applaud you.**

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of



## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Kathleen Goodman
<b>Organization</b>	ISO New England Inc.
<b>Industry Segment #</b>	2
<b>Telephone</b>	(413) 535-4111
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<p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	Chair Phone:	
	Chair Email:	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

**Comments**      The BES should be defined based on performance (impact) on the power system, not a pre-defined voltage level. Suggest using a definition similar to NPCC “BULK POWER SYSTEM – The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances have a significant adverse impact outside of the local area” (i.e. Control Area). If a pre-defined voltage level is necessary, at a minimum, it should not be less than a 115 kV threshold.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

**Comments**      This does not appropriately indicate that the losses are “cascading,” not localized, not BES, etc. Agreed with the concept of “uncontrolled successive loss,” but do not agree that the 300 MW is an appropriate measure. The loss of 300 MW of load has nothing to do with cascading or uncontrolled successive losses. You may lose over 300 MW of load, but it poses no risk to the interconnection. We believe that the standard should be that the cascading outages propagate beyond the local area (i.e. Control Area). Specific, hard, concrete examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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- Yes             No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No

Comments

The definition should capture the concept of Interconnection impact. Agreed with the concept of "uncontrolled successive loss," but do not agree that the 300 MW is an appropriate measure. The loss of 300 MW of load has nothing to do with cascading or uncontrolled successive losses. You may lose over 300 MW of load, but it poses no risk to the interconnection. We believe that the standard should be that the cascading outages propagate beyond the local area (i.e. Control Area). Specific, hard, concrete examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No

Comments

Generator Owner definition is not needed in this standard.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No

Comments

We do have a concern about having a formal process. The process could be that both Areas calculate a separate limit for common facilities based upon the internal



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transmission configuration. However, the Areas agree that they will operate to the more conservative limit.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes  No

Comments There is reference in this section indicating "which facilities are subject to," "shall have a list," "evidence that the list was updated," etc.

It is ISO-NE's position that Standard 200 should clearly reflect the fact that IROL's can be dynamic in nature. While it may be possible that every possible configuration can be identified in advance to deal with this dynamic, the reality is that this list would be extremely large and difficult to maintain. To improve on the situation, this section should require that the RA operators have a base set of limits that include N-1 configurations, along with identifying the following:

- The boundary conditions for which the published limits are applicable;
- The critical contingency that drive the applicable limit; and
- An understanding of what the associated limit is designed to protect the system against (i.e. transient stability, voltage decline, etc.)

The System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

What constitutes "evidence that the list was updated"? For compliance monitoring, all requirements need to be clear as to what exactly is needed.

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

What constitutes "evidence that the list was updated"? For compliance monitoring, all requirements need to be clear as to what exactly is needed.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

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Comments      We do have a concern about having a formal process. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes                       No  
 Comments      We agree that the directive should include notice that a potential or actual contingency requires actions to correct the problem. We do not think that the use of the specific term is required.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

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suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

- Keep the minimum of 30 seconds
- Change the minimum to 1 minute
- Change the minimum to 10 minutes

**Comments** Should be reset immediately when the Limit is cleared and sustained. Should be cleared based on last good telemetry value.

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
- No

**Comments** There is an issue with the concept of a monetary sanction matrix and what its implications are. ISO-NE, as well as NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. ISO-NE has indicated that any posted Standard, with such a matrix, will not be supported by ISO-NE. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and ISO-NE will continue to work to oppose monetary sanctions.

If the Maximum Value % over the Limit (measured after the event duration exceeds $T_v$ ) is: <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	And the event duration exceeds its $T_v$ by ___ minutes:	Then Multiply the Level 4 \$ sanction by:
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	25

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	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
20% < Max Value % ≤ 25%	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
25% < Max Value % ≤ 30%	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

Yes

No

Comments

Do not believe there should be a requirement for either. Operators should be appropriately trained and provided with strategies to take the correct actions necessary to operate a system reliably.

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard

No, I am not a member of the Ballot Pool for this standard

Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments Example: 208 requires documentation of the RA’s directives and the actions taken. Also, although the levels of non-compliance are not considered as “technical content,” for the purpose of explaining the disagreement, we need to reference Level 1 non-compliance, which is directly related to the requirement. If the actions were taken and the directives were followed, why would an operator be found non-compliant for not documenting such actions and directives?

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

### 20. Other Comments about this Standard:

The standard seems to be measured more on documentation than performance. Our concern is that the requirements to document may delay action and response time, therefore adversely impacting reliability. The standard should focus on performance and not whether every log entry was made in the correct format.

The standard should be reviewed to ensure that all references to IROLs include the word “operating” if the definition will move forward as IROL vs. IRL (note that Attachment A to NERC’s recommendation 1 from August 14<sup>th</sup> uses IRL, not IROL). Consistency needs to be applied.

The Phased-in implementation in 200 does not make sense: if the data is not obtained for 12 months, how can the monitoring, actions, etc. begin in six months?

While ISO New England generally agrees with a quick implementation of the final approved Standard, there is a large amount of specific data that must be collected and stored to meet the full intent of the Standard. Depending upon what the final approved Standard is, this may require additional software and business processes to fully implement. For this reason we believe that an implementation plan must provide a development period for the responsible entities to fully implement the standard.

There is an issue with the concept of a monetary sanction matrix and what its implications are. ISO-NE, as well as NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement “Plan B,” a “voluntary” approach affording NERC the authority to perform these types of monetary sanctions. ISO-NE has indicated that any posted Standard, with such a matrix, will not be supported by ISO-NE. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and ISO-NE will continue to work to oppose monetary sanctions.

ISO New England believes that this standard should provide clear examples within this standard, describing in detail what constitutes a violation that must be reported along with clear examples of what constitutes and SOL and IROL. Examples should include contingency pair examples for both IROL and SOL thermal limits as well as examples concerning stability and voltage limits.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.



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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Khaqan Khan</b>
<b>Organization:</b>	<b>Independent Electricity Market Operator (IMO)</b>
<b>Industry Segment #</b>	<b>2</b>
<b>Telephone</b>	<b>905-855-6288</b>
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<p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul>
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<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b>		<b><i>Group Chair:</i></b>
		<b><i>Chair Phone:</i></b>
		<b><i>Chair Email:</i></b>
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments:

We feel that the definition of BES should not be tied up with FERC tariff. It should be upto the Reliability Authority to determine whether the facilities are impactful to the neighbors or not.

It is suggested to remove the definition-item within parenthesis. Resulting definition is as below: **“A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system”**

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments:

It is not the threshold of 300 MW that qualifies an incident to cause a cascading outage. An option is to use a definition: **“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (balancing area's) boundaries”**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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- Yes       No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments:

It is proposed that definition of Widespread Area from NERC OLDTF Report (that was validated by RCWG at its December/03 meeting and was accepted by NERC OC at its March 2004 meeting) be used in the Standard 200 as well. It is stated as below:

**Widespread Area. An area that extends beyond any LOCAL AREA.**

**Local Area. . The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.**

OR

An alternative recommended approach/measure is that a wide area impact be defined with respect to occurrence of event impacting more than two RAs or BAs areas.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments:

a. The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2) as well as those within other standards. As an example, there is an inconsistency in definition of Transmission Operator, i.e. Definition of Transmission Operator should be updated to reflect definition stated in version 2 of the Functional Model – i.e. "operates or directs the operation".

b). The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Std 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

***Questions about Requirement 201 — IROL Identification***

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes  No

Comments: It is recommended that the standards should be supported by appropriate technical documentation that is allowed under the standards process to ensure a complete understanding of the standard and its consistent applications.

***Questions about Requirement 201 — IROL Identification, continued***

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLS can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLS, the RA must be able to identify the ‘current value’ of its IROLS. Do you agree with this change?

Yes  No

Comments

While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. Also refer to comments given in question 13.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLS between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLS?



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Yes  No

Comments: We agree that there should be a mutual agreement on coordination among RAs. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impactful facilities. Such requirements can be included in standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments

12 Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

Yes  No

Comments: We agree with these requirements and recommend that these should be specifically included in the standard 200.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes  No

Comments: All directives issued by an Reliability Authority must be followed.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds
- Change the minimum to 1 minute
- Change the minimum to 10 minutes

Comments: While the 30 seconds duration may be too short, and 10 minutes be too long, a duration of 2 minutes may be more appropriate.

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**12.** Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments:

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

1. The footnote on Std 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities” i.e. Std 600. Such requirements with respect to IROL are not mentioned in existing standard Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.

2. The IMO supports the comments submitted by ISO/RTO Council- Standards Review Committee as well as the CP-9 Group.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

**SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

**Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



3. Analyses and Assessments			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
4. Actions			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b><i>STD Commenter Information (For Individual Commenters)</i></b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b> Southern Company Services, Inc	<b><i>Group Chair:</i></b> Marc Butts <b><i>Chair Phone:</i></b> 205-257-4839 <b><i>Chair Email:</i></b> mmbutts@southernco.com	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
Marc Butts	Southern Company Services	1
Raymond Vice	Southern Company Services	1
Dan Baisden	Southern Company Services	1
Jim Griffith	Southern Company Services	1
Phil Winston	Georgia Power Company	3
Jim Viikinsalo	Southern Company Services	1
Mike Miller	Southern Company Services	1
Monroe Landrum	Southern Company Services	1
Gwen Frazier	Southern Company Services	1
Steve Williamson	Southern Company Services	1
Rod Hardiman	Southern Company Services	1
Jonathan Glidewell	Southern Company Services	1
Dan Richards	Southern Company Services	1
Mike Hardy	Southern Company Services	1
David Majors	Georgia Power Company	3

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes       No

Comments:

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: **We generally agree with the new definition. However, we want to point out that in some very large systems, such as Southern Company, that include large metropolitan areas there are substations that serve geographic areas with very large loads. There can be cases in such substations where a fault occurs and the breaker fails to operate. In this breaker-failure scenario, large loads can be dropped for a short period of time in a controlled fashion in order to prevent cascading outages or instability. Our concern relates to reporting this as a 'wide area impact' violation simply because it produces a loss of 300 MW, while being confined to a single substation or possibly even one or two large factories on a particular bus. We are aware that the cascading outage definition is 'magnitude and time' sensitive but we believe it should be tailored to allow rational management of local area outages of large substations if they are managed in a controlled manner.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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- Yes       No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments: **Same concern as in #2 above.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.
- Yes       No  
 Comments: **all are improved and acceptable**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments : **This requirement seems to overlap the requirements in the Coordinate Operations standard. The two standards should be coordinated to avoid unnecessary repetition.**

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of

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requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments :

**The Standard already states that RAs that share a facility, having an IROL, will agree to a 'process' for determining if it qualifies and what the value should be. Being more prescriptive doesn't add anything here.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments:

**If "posting" means naming the specific limiting elements then we think critical information such as this does nothing to improve reliability and may be to the detriment of Homeland Security. If this is only a 'numeric value' then perhaps this can be accommodated.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **This helps to identify the message as to relate to an IROL.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments; **One additional thought is to employ a deadband on both ends of the IROL violation (so that a value must be outside IROL for thirty seconds before it becomes and IROL violation). This would help avoid metering system errors triggering either the beginning or ending of an IROL.**



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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments:

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard: **We would like to express our appreciation to the SDT for taking the time and trouble to revisit the comments on this standard. We realize the time it takes to participate on these teams and the dedication to it. While the last version of this standard was voted down this version is greatly improved and should pass the test. Thank you all for your efforts to listen to the industry and the people who operate the power systems on a daily basis and making this a workable product. We applaud you.**

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>



<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>John Blazekovich</b>
<b>Organization</b>	<b>Exelon Corporation</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments – **This definition should be consistent with the definition used by the Determine Facility Ratings, System Operating Limits & Transfer Capability SDT.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments – **Allowing an "acceptable time" of a Interconnection Reliability Operating Limit appears to be inconsistent with the definition of an IROL. If an IROL leads to instability, uncontrolled separation or cascading outage it seems to be unacceptable to allow any time limits to be associated with an IROL violation (i.e. any time spent over an IROL should be a violation).**

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

**X Comments – Interconnection Reliability Operating Limit - “that adversely impact the reliability of the bulk electric system” should be removed from the definition to make it consistent with the definition of a SOL, which it is.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

**X Comments – Although we agree with the need to monitor the condition of the bulk power electric system, and can reasonably expect that IROL type scenarios and conditions can be studied in the “planning mode”, we have concerns**

that this Standard may be impossible to comply with on a “real time basis”. It appears that compliance with this standard will require executing literally hundreds, perhaps thousands of scenarios, it is unlikely one can identify IROLs ahead of time. Especially since each day presents a different system, both from generation pattern perspective and from transmission topology perspective.

8. Do you agree with the compliance monitoring process?

Yes       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes       No

Comments – **We suspect the public postings of IROL’s would be a dream come true for any terrorist considering an attack against the bulk power infrastructure of the United States and Canada.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45



**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

Yes       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments – **Before we determine how Exelon will cast it’s votes we would like to see revision to the definitions (as commented) and some direction on how compliance with this Standard will be accomplished on a “real time” basis.**

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.





**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

In concept this is OK, however, in current practice, simulation methods do not usually stress the system to the point of loss of load. Some of the mechanisms that might result in loss of load, such as collapse of an isolated island, may not be demonstrated with current modeling techniques. Current study techniques simulate only single contingency. Actual events which result in loss of 300 MW or more of networked system load are usually due to several contingencies occurring prior to system adjustment. There are too many possible scenarios to identify with current study resources. Such an approach is not recommended. Therefore the proposed criterion may not be practical to apply in studies.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes       No

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4. Several balloters indicated a continued misunderstanding of the difference between ‘wide area impact’ and ‘local area’. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was ‘widespread’. (Note that while the term, ‘wide area impact’ is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

The definition of “Interconnection Reliability Operating Limit” seems clear. However, addition explanation beyond the definition is required to shed light on the intended meaning and application of the term. NERC should consider the creation of a IROL reference document along the lines of the NERC “Transmission Transfer Capability” reference document. The impression is given that IROLs are simply a subset of SOLs as determined using current methods (e.g. study procedures). For some IROLs this will be true, i.e., where current methods demonstrate a specific transfer capability is limited by stability. However, in situations where thermal limits are lower than stability limits, it is not current practice (in MAPP) to expend additional effort to identify higher stability limits. A straight forward interpretation of the definition would require this additional effort. Is this NERC’s intent? If so, NERC is introducing an additional requirement beyond current practice. This raises some important questions. How much extra effort is required and is it justified? Will monitoring IROLs derived in this way be fully effective to prevent instability, uncontrolled separation, or cascading outages? For example, simultaneously exceeding several thermal limits (individually SOLs not IROLs) may be approaching a voltage instability condition but this condition might not be recognized using the proposed IROL monitoring methodology. This is a good example of how an IROL might exist which will not be identified by current methods. The implications of the proposed IROL methodology have not been sufficiently explored and documented to ensure effective understanding and application within the electrical industry

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

It is not clear how section 201 coordinates with Standard 600 (Determining limits) The requirement that IROLs should be current (reflect current system conditions, i.e. topology, loading, generation, etc.) is not mentioned under Requirements, it is only stated in item 3 of the measures. The difference between Measures (2) and (3) is not clear; they seem to be saying the same thing. The written structure of 201 might be improved by having a one-to-one correspondence between Requirements and Measures. Measure (1) (i) does not recognize that changes in topography in an adjacent RA area may impact the current IROL values.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

The requirements in item 3 of this section should be expanded to include evidence of agreed procedures to identify IROLs for facilities shared by RAs and to ensure that IROLs reflect current system conditions.

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a requirement that the RA obtain agreement from its adjacent RAs on which facilities in the combined RA Areas are subject to IROLs, however the Standard to address this requirement should be Standard 100 "Coordinate Operations" and not this Standard.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a

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reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

There should be a requirement to provide information about IROLs to any affected entities particularly Transmission Operator, Balancing Authority and Interchange Authority.

12. Other comments about Requirement 201:

- There needs to be a reference in 201 that the determination of IROLs should be consistent with Standard 600. In Standard 600 it should be explicitly required for the RA to demonstrate it has the tools, procedures and trained staff to do the required studies.
- The link between an Interconnection Reliability Operating Limit and the limits defined in standard 600 is tenuous – especially as the term “system operating limits” is not capitalized nor is there a reference to standard 600 in the definitions. Without that link, an IROL could be seen as a limit even in steady state (there is no contingency clearly associated with the definition – the consideration of contingencies is buried in standard 603). Presumably the link is believed to be made by calling IROLs a subset of SOLs. While Manitoba Hydro still believes that such limits are not a subset of SOLs but, rather, new limits based on similar studies, but with different criteria for acceptable performance (i.e., limits may be exceeded but cascading, instability and uncontrolled separation are BARELY avoided) there is value in discussing the IROL concept as put forward by the OWL team.

In standard 600, SOLs are established through consideration of all next single contingencies and for some regions, all multiple contingencies and for others, a set of credible multiple contingencies. Universally, a SOL must be established to avoid cascading, instability and uncontrolled separation. The question for the OWL group to consider is – how does standard 200 deal with the fact that in thermally-limited systems the margin between the SOL and cascading, etc., may be very large, while in stability-limited systems, there will still be some reliability margin, likely not a large one, between the SOL and the onset of cascading, etc. Thus, the increased risk of a problem if an SOL is violated is a function of the nature of the limit itself – the risk associated with stability limits is likely higher than for thermal limits.

Of the list of nasty events, the risk of instability and uncontrolled separation will be fairly evident from stability studies but the risk of cascading is dependent on thermal ratings, thermal overload and operator action to some extent. Since the SOL definition allows for system readjustments, while requiring limits not be exceeded, the risk of cascading increases if the required adjustments are not undertaken – and these may not be automatic actions. Note that the Standard 600 assumes that qualified ratings will be provided for all facilities (i.e, the rating value will have an associated time period – perhaps 15 minute, 2 hour, etc.) so that facilities ratings are assumed to be respected – there could an exception in the case of credible multiple contingencies, where a region may tolerate some facility violation if it can be managed expeditiously and not lead to cascading – MAPP

presently does this although the ratings being exceeded in the checking process are likely the long term values, not the short term values).

Since the Q&A document talks about increased RISK of cascading, rather than occurrence of cascading, the OWL team needs to clarify this potential source of confusion – there will almost always be increased risk of a problem as loadings increase or are left unchanged – but that opens the door to IROL evaluation having to consider the impacts of failures of the operator, etc. As such, any limit in the system could be considered an IROL, since, for some combination of contingencies, the unacceptable consequences could be seen. In fact, you could even consider the definition of an IROL as a steady state limit.

If the OWL team is adamant that IROLs are a subset of SOLs then the rest of the Standard 200 should be reviewed to ensure that risks are properly considered in the measurements and compliance process – right now some entities might be penalized for low risk events.

One way to manage the discrepancy would be for IROLs to be established at a known margin from the nasty three events – so the IROL for a thermally-limited system might be significantly higher than the corresponding SOL.

Until there is more clarity on the definition of an IROL, the implementation plan is suspect when it addresses the current state – there is a good chance IROLs are not being identified and calculated now, as expected by the standard.

- Manitoba Hydro is greatly concerned relative to the statement in the Q&A document regarding special protection schemes since the response to the question indicates that the special protection system should basically be ignored. The reality in MAPP is that such systems are put in place with a high degree of reliability and with the expectation that they will not fail. If Manitoba Hydro had to live with the situation as outlined in the response, we would be in violation every time we export more than, perhaps, 500 MW rather than the 2000 MW we can export presently. Is that really what the response was meant to say; or is the response really saying that you should know what the limits are if the special protection is out of service and respect those limits?
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**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

The wording of (a) could be improved. Suggest: "The system conditions under which exceeding the Interconnection Reliability Operating Limit could lead to instability, uncontrolled separation or cascading outages." As is, the wording of (a) could be interpreted to mean that it is ok to exceed the IROL under other system conditions. Suggest also that stating these items be required in the determination of all System Operating Limits (applicable to Standard 600).

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute



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- Change the minimum to 10 minutes
- Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

Manitoba Hydro agrees with the sanctions listed in the table below; however we believe the multiplications factors should continue to increase for event durations beyond 15 minutes. For example, the sanction for an event duration of one hour should be more severe than for an event duration of 15 minutes and so on.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	25
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	30
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30

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	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

Manitoba Hydro has technical concerns relative to the concept of IROL as referenced in this Standard. These concerns have been provided to the SDT in previous postings of this Standard and are further elaborated upon in question 12 of this comment document. If the SDT can satisfactorily address these concerns then Manitoba Hydro would support this Standard.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial

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Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

Manitoba Hydro believes that this Standard should be field tested prior to implementation. This will ensure that all elements of the Standard are relevant to the operational reliability of the bulk electric system and can be implemented in a straightforward manner

In section 203 (d) Compliance Monitoring Process item (3) (i) it makes more sense that the RA provide evidence that Operational Planning Analysis occurs at least once a day and what the results were rather than indicating only the most recent analysis. Similar comment for 203 (d) (3) (iii). The evidence could be in the form of a log.

In section 205 (b) Measures, there is no measure to establish that the RA is notifying its Compliance Monitor when data is not provided or data collection issues are not resolved.

In section 205 (d) Compliance Monitoring Process, there is no check that the RA is notifying its Compliance Monitor when data is not provided or data collection issues are not resolved. There are no sanctions for not notifying

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

**We generally agree with the new definition. However, we want to point out that in some very large systems, such as Southern Company, that include large metropolitan areas there are substations that serve geographic areas with very large loads. There can be cases in such substations where a fault occurs and the breaker fails to operate. In this breaker-failure scenario, large loads can be dropped for a short period of time in a controlled fashion in order to prevent cascading outages or instability. Our concern relates to reporting this as a 'wide area impact' violation simply because it produces a loss of 300 MW, while being confined to a single substation or possibly even one or two large factories on a particular bus. We are aware that the cascading outage definition is 'magnitude and time' sensitive but we believe it should be tailored to allow rational management of local area outages of large substations if they are managed in a controlled manner.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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Yes                       No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No  
 Comments **See No. 2 above.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.
- Yes                       No  
 Comments **All definitions are acceptable.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                      X No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- X Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- X Yes                       No  
 Comments



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15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds
- Change the minimum to 1 minute
- Change the minimum to 10 minutes
- Comments

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes  No
- Comments

If the Maximum Value % over the Limit (measured after the event duration exceeds $T_v$ ) is: <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	And the event duration exceeds its $T_v$ by ___ minutes:	Then Multiply the Level 4 \$ sanction by:
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	$\text{Duration} > T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	$\text{Duration} > T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	$\text{Duration} > T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20

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	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- X Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- X Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
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20. Other Comments about this Standard:

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### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: 35 kV is too low for inclusion in the bulk electric system definition. The rest of this definition is less descriptive than the current definition in the NERC Operating Manual and contradicts the definition used in the NERC Planning Standards since 1995. The current definition in the NERC Planning Standards should be used as a starting point. Also, any definition of the Bulk Electric System should include the concept that 'networked' facilities (as opposed to radial) make up the BES and generally operated at voltages 100 kV or greater. The definition of the BES should not confuse FERC accounting rules/definitions with the functionality of the facilities themselves.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The proposed definition is unclear. Why the need to include load impacted and time requirements into the Cascading Outage definition? Is a 250 MW loss of load for 24 hours a cascading event? How about 1000 MW for 10 Minutes? The key thought of a Cascading Outage is that it is Unplanned and Uncontrolled outage over a wider area. The Facility Rating SDT is using as a definition of Cascading Outage is "The uncontrolled and unplanned successive loss of system elements triggered by an incident at any location." Is it really necessary to define cascading outage, if we can define as above when an SOL is to be considered an IROL? To be a cascading outage, multiple system elements must be involved and a series of uncontrolled events occur.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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Yes             No

Comments: How do you consistently define what risk is acceptable and what risk is not? How do we ensure all the RA's evaluate risk using the same criteria and assessment process? The upper limit of 30 minutes is not a problem. However, why would any entity select a Tv less than 30 minutes? Shouldn't the Tv concept require you to take immediate action, if studies show that exceeding this IROL could lead to system instability or collapse? An entity should not be allowed to operate such that the occurrence of the next contingency results in a cascading blackout. Under such a scenario, the entity needs to take immediate action as soon as it is identified that they are in such a situation, not wait 30 minutes or wait until the contingency occurs. The problem with this Standard in its current form is that it has watered down an IROL event by tying it to loss of 300 MW of load. For a large system, that may be the loss of only 2 or 3 facilities or less. And it could include events that do not threaten the Interconnection. We would suggest that a Tv of no greater than 30 minutes is adequate for a SOL violation, but may be totally inadequate for a true IROL.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: The DOE threshold was never intended to imply that it defined a wide area impact. The definition for wide area impact needs to include the concept that multiple facilities are impacted, and exceeds a local geographic footprint. For a large entity, 300 MW can be as little as 1% of their peak load, arguably not a wide area impact for them. It make sense to set a quantative threshold. However, such threshold should not be so limiting as for larger systems to be able to be exceeded by a single local event.

What is missing in this Standard is the concept that we need to prevent events that put the interconnection at risk. Instead this Standard is focusing on events within a single Control Area or Transmission Operator footprint. For convenience, a 300 MW threshold has been suggested, but there is no reference to impact to the interconnection. I guess one can argue, that if we force such severely constrained operations at the local level, then we should never get to the point of placing risks on the Interconnection. Is that the point of this standard? If so, then this is not about operating to IROL's, but rather in operating well under SOL's so as to never approach an IROL.

This definition continues to miss the mark and remains unclear. If the SDT see a need to define a "Wide Area Impact" using a arbitrary load at risk level, may be acceptable. But under the current definition, is the loss of a 5000 MW load area for 12 minutes a wide area impact? Per definition the answer is no, practicality says 'yes'.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments The definition of an IROL Event Duration lists a reset time of 30 seconds. In 204(b)(1)(ii) the reset period is given as one minute. Whichever is the proper intent of the SDT, 30 seconds or 1 minute is too short of a period for the reset. This should be on the order of 5 minutes or so in order to indicate that stable operating conditions have been attained.

The definition of an IROL continues to be unclear. For example: If an SOL (System Operating Limit) is a maximum permissible value so as to not exceed a facility rating or

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reliability criteria, then, if 'everyone' was doing their job there should never be an occurrence of an IROL. There should never be a situation where the outage of the next facility will lead to 'instability, uncontrolled separation, or cascading outages'. Therefore, for the system to be exposed to a IROL, a more restricting System Operating Limit must have already been exceeded, unidentified, or ignored.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes  No

Comments: As per changes being made to NERC Policy 9, the default is you operate to the most conservative position. Thus, if one RC says the facility has an IROL, all RCs need to respect and operate to that IROL.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes  No

Comments

8. Do you agree with the compliance monitoring process?

Yes  No

Comments: The phrase in 201(d)(1) referring to on-site reviews every three years be replaced with on-site reviews as needed. No reason for the standard to lock into either a 3-year cycle or should leave room for the industry to change the frequency, by a shorter cycle.

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments: I suggest this standard adopt the concept included in the newly revised Policy 9, which requires RCs to respect each others limits and operate to the most conservative position when disagreements arise.

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11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No

Comments: This is a bad idea with what should be obvious infrastructure security risks associated with it. However, the business community may want to see these limits posted. There should be mechanism for the commercial community to view such limits while observing the infrastructure security requirements.

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: Clear and concise communications is always the preference.

However, implied in this statement above, is that if the RC issues a directive and does not state it is related to an IROL, then the responsible RA is cleared of all fault, etc. if the RAI delays in following the directive. This is disturbing and part of the reason for some of the language change in the newly revised Policy 5 & 9.

**From newly revised Policy 5:**

**Complying with Reliability Coordinator directives.** The OPERATING AUTHORITY shall comply with RELIABILITY COORDINATOR directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances the OPERATING AUTHORITY must immediately inform the RELIABILITY COORDINATOR of the inability to perform the directive so that the RELIABILITY COORDINATOR can implement alternate remedial actions.

This type of language must find its way into the new Standards.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

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suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

Keep the minimum of 30 seconds

Change the minimum to 1 minute

Change the minimum to 10 minutes

Comments: Something on the order of 5-10 minutes may be a better indicator of true system recovery.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes  No  
 Comments:

There are no sanctions listed for a Maximum Value over 30%. The last stage should be set at equal to or greater than 25%.

The validity of the table is directly related to the definition of IROL. If an IROL is truly a significant interconnection event, similar in consequences to the August 14 event, then it doesn't matter if the IROL is violated for 30 minutes or 30 seconds, it was violated and it resulted in a blackout. If defined properly, a major portion of the interconnection would be jeopardized when an IROL is violated. If IROL were defined properly, the table would not be needed, as even exceeding the limit for a few minutes would be considered placing the Interconnection at extreme risk and thus subject to maximum penalty. Therefore a graduated table may be inappropriate. On the other hand, if IROL is defined as only 300 MW of load loss, then a graduated table may be more fitting.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	Duration > $T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	Duration > $T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	Duration > $T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	Duration > $T_v + 15 \text{ minutes}$	35

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20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.



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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Chifong Thomas</b>
<b>Organization</b>	<b>Pacific Gas and Electric Co.</b>
<b>Industry Segment #</b>	<b>1</b>
<b>Telephone</b>	<b>(415) 973-7646</b>
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<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b>	<b><i>Group Chair:</i></b>	
	<b><i>Chair Phone:</i></b>	
	<b><i>Chair Email:</i></b>	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
Glenn Rounds	Pacific Gas and Electric Co.	1
Ben Morris	Pacific Gas and Electric Co.	1

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                      9 No

9 Comments

Please delete the parenthesis and add, “the operation of which would impact the operation of the Interconnection System of the Region, or as approved by a tariff filed with FERC”. The operation of a Bulk Electric System should have impacts on the operation of the Regional Interconnected System. In most systems in WECC, 35 kV would be considered distribution voltage.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      9 No

9 Comments:

Loss of 300 MW of load is not a measure or indication of cascading. Please change the definition to read, “The uncontrolled and unplanned successive loss of system elements triggered by an incident at any location. Cascading results in widespread electric service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies”.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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9 Yes  No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      9 No

9 Comments: For some systems, it is not uncommon to have loads of 300 MW or more located in a small area. Loss of 300 MW is therefore not an indication of wide area impacts. If implemented, such criteria could significantly increase workload and take resources away from work needed to identify, analyze, monitor and mitigate problems concerning IROLs, the violation of which could truly lead to cascading.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments:

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

9 Yes                       No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

9 Yes                       No



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Comments

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

9 Comments: Publicly posting IROLs could introduce market distortion. The information should be shared *only* with entities responsible for the reliable operation of the electric transmission system. In addition, if the IROL is to be “dynamic”, this requirement may not be workable, or, even if workable, could be burdensome.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes  No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes  No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

9 Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard

- No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

9 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

9 Comments: We would like to emphasize that we would agree with the technical content only if our comments on the definitions are addressed.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

9 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b> 1 – Trans. Owners 2 – RTO's, ISO's, RRC's 3 – LSE's 4 – TDU's 5 - Generators 6 - Brokers, Aggregators, and Marketers 7 - Large Electricity End Users 8 - Small Electricity Users 9 - Federal, State, and Provincial Regulatory or other Govt. Entities
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> New York Independent System Operator (NYISO)	<b>Group Chair:</b> Michael C. Calimano Chair Phone: 518-356-6129 Chair Email: mcalimano@nyiso.com	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Greg Campoli	New York ISO (NYISO)	2
James Castle	New York ISO (NYISO)	2
John Ravalli	New York ISO (NYISO)	2
Karl Tammar	New York ISO (NYISO)	2
Robert Waldele	New York ISO (NYISO)	2

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

This definition should be reliability-“performance based” and references to tariffs should be removed. For reference, we offer the existing NPCC Definition for its **Bulk Power System** is;

“The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.”

The NYISO strongly urges the eventual adoption of a “performance based” definition not a “voltage based” one.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

An event characterized by one or more of the following phenomena:

- the loss of **power** system **stability**
- cascading outages of circuits
- oscillations; abnormal ranges of frequency or voltage or both.

The NYISO believes that the standard should specify that the cascading outages not propagate beyond the local area (i.e. Control Area or balancing area). A threshold of 300 MW does not qualify an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn’t necessarily pose a risk to the interconnection. We note that the definition of “Cascading Outage” as outlined in Standard 200 is different from that defined in

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Standard 600 (Develop Facility Ratings, ...). We recommend adopting a common definition as given in Std 600, including a minor modification, as follows. i.e.”

**“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area’s) boundaries.”**

In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several ballots indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most ballots indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

NYISO agrees that the  $T_v$  should be limited to 30 mins. We recommend the last sentence to read “ $T_v$  shall not be greater than 30 minutes.”

Add discussion to Q&A document to give rationale as to why  $T_v$  under 30 minutes is required.

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4. Several ballots indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

The NYISO agrees with the definition of Widespread Area from NERC OLDTF Report (that was validated by RCWG at its December/03 meeting and was accepted by NERC OC at its March 2004 meeting) be used in the Standard 200 as well. It is stated as below:

**Widespread Area** An area that extends beyond any LOCAL AREA.

**Local Area** The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.

OR an alternative option/suggestion is also proposed as follows:

“The impact of an incident resulting in uncontrolled successive loss of system elements in networked system and where the consequences of such significant adverse impact cannot be contained within a defined area that can be demonstrated by studies.

Wide area impact may also be defined correlating it to occurrences of event impacting more than one Reliability Authority.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes                       No  
 Comments

The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2). As an example, there is an inconsistency in definition of Transmission Operator, i.e. Definition of Transmission Operator should be updated to reflect definition stated in version 2 of the Functional Model – i.e. “operates or directs the operation”.

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Definitions should be in one place not in each standard and definitely should not appear if they are in the Functional Model document.

The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Std 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“ A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

### Questions about Requirement 201 — IROL Identification

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

The wording should be clarified to only include those facilities that are subject to IROLs.

### Questions about Requirement 201 — IROL Identification, continued

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLs, the RA must be able to identify the ‘current value’ of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments



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The requirements need to be clear as to what exactly is needed. For example, what constitutes evidence that a list was updated from an auditing perspective?

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

All RAs should be aware of all IROLs but this information may not be appropriate for the “general public”. There is a concern over infrastructure security and issues related to CIPC.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

This is a desirable addition, and should appear consistently throughout the document.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standards.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

The NYISO agrees with the opinion, voiced by Mr. Gent's comments to the NERC BOT that monetary sanctions are ineffective to ensure compliance and that market mechanisms and letters of increasing severity are more effective.

There is an issue with the concept of a monetary sanction matrix and what its implications are. NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. NPCC has indicated that any posted Standard, with such a matrix, will not be supported by NPCC, or its members.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35

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20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**(Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?)

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

As indicated in our responses, the NYISO agrees with much of the technical content of this standard and offers suggestions and opinions on the portions we disagree with.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

The NYISO contributed to and fully supports the comments of the ISO/RTO Council.

The NYISO concurs with the following comments submitted by NPCC:

- The footnote on Std 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities” i.e. Std 600. Such requirements with respect to IROL are not mentioned in Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.
- Owing to the fact that “ $T_v$ ” value can be smaller than 30 minutes, it is suggested to update the sub-section 203 (b) (ii) as follows: “ The Reliability authority shall conduct a Real-time Assessment periodically, once every 30 minutes or lesser as applicable in order to capture the allowable lesser duration  $T_{v,s}$ .
- General comment on the standard is it seems overly burdensome with documentation and less focused on performance.
- Examples regarding the individual definitions might be helpful to be added in an accompanying document.
- The Standard should address repeated, planned IROL violations that don’t exceed or consistently approach  $T_v$  and preventing this/discouraging this mode of operation from reoccurring. **It is not OK to exceed IROLs** and there are entities that frequently exceed them for short periods of time for economic or other reasons, they are not reportable because they do not exceed  $T_v$ . This behavior must be discouraged through measurement of frequency and severity of IROL through the reporting mechanisms outlined in this standard, and as outlined in new template P2 T1 “*System Operating/IROL Violations*”. In addition, there were no IROL  $T_v$  violations reported to NERC as a result of the events occurring on August 14<sup>th</sup> 2003 which implies either more stringent reporting is required or the IROL and  $T_v$  limit needs to be reevaluated.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.



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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Michael D. Zahorik</b>
<b>Organization</b>	<b>American Transmission Co</b>
<b>Industry Segment #</b>	<b>1</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments 35 Kv seems rather low voltage. 50 or 100 Kv may be a better value.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments 300 mw is to low a value. There are instances that this amount of load can be lost and there are no network implications.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments Again 300 Mw is too low. There needs to be some definition of network impact. ATC has areas where 300 Mw can be lost and that loss will not affect the network.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes       No



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Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments Each RA should agree with the calling RA on the IRL.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments They can not all be determined prior to the fact. They will change. A cascade event generally requires multi elements which will increase the possibilities in a factorial fashion.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments This information should be issued to the System Operator when the IRL is issued

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments Time of an event is not important until the violation of over 30 minutes has occurred. An IRL should be addressed ASAP, the solution should also be ASAP, with penalties after the 30 minutes.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments We call them contingency plans

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
--

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Standards Review Committee for the IRC	<b>Group Chair:</b> Karl Tammar <b>Chair Phone:</b> 518-356-6205 <b>Chair Email:</b> ktammar@nyiso.com	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Dale McMaster	AESO	2
Ed Riley	CAISO	2
Sam Jones	ERCOT	2
Don Tench	IMO	2
Dave LaPlante	ISO_NE	2
William Phillips	MISO	2
Karl Tammar	NYISO	2
Bruce Balmat	PJM	2
Carl Monroe	SPP	2

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: Please drop the parenthetical expression – we would ask NERC and the industry to develop “standard” definitions of the common terms to be used by the all standard drafting teams.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The definition should read as follows: The uncontrolled successive loss of Bulk Power Transmission elements that propagate beyond a balancing area's boundaries.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No

Comments: **Wide Area Impact should be defined in relation to a BA or RA footprint. The measure should be that a wide area event occurs when an event has an impact in two or more BA or RA areas.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes             No

Comments: **A definition of "shared facilities" is requested.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes             No

Comments: **The wording should be clarified to only include those facilities that are subject to IROLs.**

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes             No

Comments

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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments: **There was no group consensus – financial penalties are an issue for some group members.**

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments: **What does “made public” mean? All RAs should be aware of all IROLs but this information may not be appropriate for the “general public”. There is a concern over infrastructure security and some concern voiced by a CIPC member.**

12. Other comments about Requirement 201: **None**

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **All directives issued by an RA must be followed without question, no matter what the circumstances. The explanations can be provided after actions have been taken and the problem solved.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments: **The SRC would like to see a value remain below its limit for two minutes with the understanding that if the value remains below the limit for two minutes, the reported end of the event or violation occurs at the time the value actually dropped below the limit.**



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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments: **The group did not reach consensus.**

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard:** We are all members of the ballot pool and intend to vote individually. There was no discussion of the remaining questions as a group response seemed inappropriate.

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## FRCC Comments 4/14/04

### Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

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- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

#### **Changes outside the Scope of the SDT:**

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

#### ***Wait for the Functional Model***

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

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The Functional Model defines tasks and relationships. To date the Functional Model's tasks and relationships remain virtually the same as they were in the original version. The addition of separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

#### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

#### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

#### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

#### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

#### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

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<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>



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<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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### ***STD Commenter Information (For Individual Commenters)***

**Name** Patti Metro on behalf of FRCC members

**Organization** Florida Reliability Coordinating Council (FRCC)

**Industry Segment #**

**Telephone** 813-289-5644

**E-mail** pmetro@frcc.com

### **Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>FRCC</i>	<b>Group Chair:</b> Chair Phone: Chair Email:	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Patti Metro</i>	<i>FRCC</i>	<b>2</b>
<i>Linda Campbell</i>	<i>FRCC</i>	<b>2</b>
<i>Steve Wallace</i>	<i>Seminole Electric Cooperative</i>	<b>4</b>
<i>Amy Long</i>	<i>Lakeland Electric</i>	<b>1</b>
<i>Richard Gilbert</i>	<i>Lakeland Electric</i>	<b>3</b>
<i>Ron Donahey</i>	<i>Tampa Electric Company</i>	<b>3</b>
<i>Beth Young</i>	<i>Tampa Electric Company</i>	<b>3</b>
<i>Roger Hunnicutt</i>	<i>Gainesville Regional Utilities</i>	<b>5</b>
<i>Roger Westphal</i>	<i>City of Gainesville</i>	<b>3</b>
<i>Greg Woessner</i>	<i>Kissimmee Utility Authority</i>	<b>3</b>
<i>Ben Sharma</i>	<i>Kissimmee Utility Authority</i>	<b>3</b>
<i>Garry Baker</i>	<i>JEA</i>	<b>1</b>
<i>Ed DeVarona</i>	<i>Florida Power &amp; Light Co.</i>	<b>1</b>
<i>Preston Pierce</i>	<i>Progress Energy Florida</i>	<b>1</b>
<i>Bob Remley</i>	<i>Clay Electric Cooperative</i>	<b>4</b>
<i>Joe Krupar</i>	<i>Florida Municipal Power Agency</i>	<b>3</b>
<i>Paul Elwing</i>	<i>Lakeland Electric</i>	<b>5</b>
<i>Joe Roos</i>	<i>Ocala Electric Utility</i>	<b>3</b>

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#### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes       No  
 Comments

Suggested Definition:

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the interconnected electrical generation resources and the interconnected high voltage transmission system **above 100 kV**. Radial transmission lines serving only load with one transmission source are not included in this definition.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes       No  
 Comments

This definition provides guidelines to the RA for establishing limits and implementation of mitigation plans. For clarification, If an entity (Reliability Authority, Balancing Authority, Transmission Operator, etc...) is going to report an SOL to the RA and the RA will make

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the determination as to whether or not the SOL is indeed an IROL, should the clock not start until the determination is made by the RA? What happens if the RA takes 20-30 minutes trying to determine if an IROL exists?

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

definition for Wide Area Impact?

- Yes       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

#### Questions about Requirement 201 — IROL Identification

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments

#### Questions about Requirement 201 — IROL Identification, continued

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes       No  
 Comments

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It appears that this change is reflected in Measure (2) and Noncompliance level (4)(i). There should be a similar change made to the requirements section of 201.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

(3) indicates that the Reliability Authority must provide certain information upon request of the Compliance Monitor, but does not indicate how long the Reliability Authority has to provide the information. A possible revision could be that "upon request the Reliability Authority will provide the following information to the Compliance Monitor within 5 business days".

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

Level 3 non-compliance indicates that the list must be updated as with the measurements some type of time period should be included.

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments

This type of information can be considered secure Critical Infrastructure Information as well as market sensitive and should not be publicly posted.

12. Other comments about Requirement 201:

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#### Questions about Requirement 202 — Monitoring

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

Yes       No

Comments

It is very important for the system operator to have as much information available as possible to make decisions to ensure system reliability.

#### Questions about Requirement 204 — Actions

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes       No

Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds

Change the minimum to 1 minute

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Change the minimum to 10 minutes

Comments

16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes

No

Comments

We had two members comment about the fixed sanction"

If the Maximum Value % over the Limit (measured after the event duration exceeds $T_v$ ) is: <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	And the event duration exceeds its $T_v$ by __ minutes:	Then Multiply the Level 4 \$ sanction by:
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	25
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	30
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30



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	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

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#### **Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

Yes       No

Comments

#### **Other Questions about this Standard**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard

No, I am not a member of the Ballot Pool for this standard

Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

#### 21. Other Comments about this Standard:

- The Compliance Monitoring Process for 202-208 requires that certain information be provided to the Compliance Monitor “upon request”, but does not indicate how long the Reliability Authority has to provide the information. A possible revision could be that “ upon request the Reliability Authority will provide the following information to the Compliance Monitor within 5 business days”.
- 204
  - Requirements
    1. Who is responsible for implementing an IROL mitigation plan? Transmission Owner? RA? Does the RA develop the plan or the Transmission Owner?
    2. Footnote 2 indicates the no action “may be acceptable as long as it is documented”, what type of documentation is required?
  - Non-Compliance Level 4 - Should be revised to indicate that the Reliability Authority is non-compliant because no actions were taken to mitigate an IROL or to document the violation.
- 205
  - Measure (3)(i) should be revised to indicate that the Compliance Monitor should be notified within five business days of determining the data issue could not be resolved.
  - Non-compliance levels – Why is there a Level 1 and Level 2, rather that Level 3 and Level 4. It appears that this information is very important to maintain a reliable system. In additions, if there is a measure for notifying the Compliance Monitor when data issues cannot be resolved, a level of non-compliance should be included when this notification is not provided.
- 207
  - Requirements and Levels of Non-Compliance – from this it appears that the Reliability Authority will work with other entities to develop processes, procedures, and plans, but the levels of non-compliance indicated that these activities could be developed with no input. What good is this if an Reliability Authority can’t perform the mitigation? Seems very broad and burdensome to the Reliability Authority.
- 208
  - Requirements - The standard does not address seams issues. Although 201 requires Reliability Authorities that share facilities to develop IROL procedures and lists there needs to be a requirement included that would allow one Reliability Authority to give directives to another Reliability Authority.

## FRCC Comments 4/14/04

### Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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- Levels of Non-Compliance – If an entity does not follow the Reliability Authority directive, and the Reliability Authority does not have the ability to take action, other than the financial penalty there is no way to make entities comply with directives and reliability will be jeopardized.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Peter Burke [on behalf of ATC's Jason Shaver]
<b>Organization</b>	American Transmission Company
<b>Industry Segment # 1</b>	
<b>Telephone</b>	262-506-6863
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- |   |
|---|
| <b>Key to Industry Segment #'s:</b><br>1 – Trans. Owners<br>2 – RTO's, ISO's, RRC's<br>3 – LSE's<br>4 – TDU's<br>5 - Generators<br>6 - Brokers, Aggregators, and Marketers<br>7 - Large Electricity End Users<br>8 - Small Electricity Users<br>9 - Federal, State, and Provincial Regulatory or other Govt. Entities |
|---|

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>	
<b>Name of Group:</b>	<b>Group Chair:</b>
	<b>Chair Phone:</b>
	<b>Chair Email:</b>

<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

The threshold of 300 MW is to low. While it is understandable that the DOE requires that a loss of this size should be reported as a disturbance, it should not be the threshold of a cascading outage. A suggested MW level would be somewhere between 1000 and 5000 MW.

Could the group elaborate on the 15 minutes. How would an RA be able to determine if the load was going to be lost for more than 15 minutes? Consider whether an SOL, that is determined to be an IROL, go back to an SOL if an entity, through some process, stated that the load would be restored within 10 minutes.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

ATC support the position that an IROL should not be exceed by more than 30 minutes.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

"Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL."

The term 'Wide area impact' is in the list of definitions but that term does not appear anywhere in the definition of an IROL. If is not used in the standard or in the definition of an IROL then should it not be removed from the definitions list?

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

ATC brought up a concern during the last posting about the definition of Real-Time Assessment.

It seems the SDT is attempting to solve two situations with this one definition.

The first goal is to have the RA perform this assessment once every 30 minutes to determine if the current system, using that RA's pre-defined contingency list, is in an IROL situation.

The second goal is to project over the time between this assessment and the next scheduled assessment to determine if the RA's area may be approaching or potentially in an IROL.

The term Real-Time Assessment seems to support the first goal but, because of its name, does not seem to support the second goal. What if an RA only did the first goal of assessment and did not perform the second?

Suggestions would be to:

Remove the term 'expected system condition' from the definition.

Create a new term and standard addressing the requirement for the RA to look over the interval between Assessments and determine if the RA's system may be approaching or potentially in an IROL.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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- Yes                       No  
 Comments

It's important that the RA's come to some type of commonality when determining if a shared facility should be subject to an IROL. This approach of an agreed upon process should be able to achieve that goal. Would this SDT put out a technical reference on how this type of an agreed upon process should read, with suggested inclusions and reasons for those suggestions?

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

Although the yes box has been check it does not mean that we support all of the revised changes. The question says the SDT modified the requirement "so that instead of requiring a 'list' of IROL's,..." but, in the measures, you require a list so a list is required. Our concern is not mainly of the list but the idea of how often the list needs to be updated. Since an IROL is a subset of SOL's, would it not be more efficient if the RA could identify those SOLs that are IROLs and show that they are monitoring them?

**Measures #3**

How does the SDT think that this measure can be demonstrated? In our opinion this may only be able to be demonstrated in front of the Compliance Monitor personally.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

(2) Is difficult to understand, confusing. Would the SDT please provide greater clarification?

(3) i. It is our opinion that this should be a level 4 not level 3. This is a situation were an RA has blatantly ignored this standard and put the Interconnection at risk.

(3) ii. Suggestion would be to remove "updated" and replace it with "being reviewed."

(4) ii. This should be changed to something where there is no evidence that the RA is actively reviewing its SOL to determine whether it should be classified as an IROL. It seems possible that an RA at a given audit time my not have any IROL and, because of that, no list exists which shows any IROL, thus mandating a Level 4 Noncompliance. In Question 7 you stated that a list was not required in requirements.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No

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Comments

We are not convinced that a formal agreement has to be in place for adjacent RAs to determine if a facility should be subject to an IROL but there should be a mutually agreed upon process / procedure to identify and honor those facilities identified.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes

No

Comments

The RA should share those IROLs with its members and adjacent RA but public posting may prove to be overly burdensome to the RA's.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

- Yes                       No  
 Comments

We have not indicated a yes or no because the question is confusing. This addition does not appear in the 202 standard that this comment form accompanies. If you are asking if this should be added but has not been currently added to the standard, then ATC's opinion is that this should appear in the standard. The only suggestion is that item "(c)" is not needed. The idea behind moving an SOL into the IROL category is that it has a high potential to cause an adverse impact to the Interconnection.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments



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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

ATC agrees with some of the technical content of this standard but is concerned that this question requires us to agree to all of the technical content of this standard and if we do not, we should check “I do not agree”. The SDT is on the correct path in achieving approval of this standard but this latest version presents some problems / concerns.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

ATCs approach is to review each standard on its own merits.

### 20. Other Comments about this Standard:

#### 202 Monitoring

The SDT switches between the terms “operations personnel” and “system operators.” It seems that both of these terms refer to the same people. If so, could the SDT choose a single term to refer to that group? If not, could the SDT explain the difference?

#### Noncompliance

(4) i. This seems to be identical to (ii). Could the SDT clarify the difference?

(4) iii. How would this be reviewed? It seems that this is a subjective item, would the SDT please clarify?

#### 203 Analyses and Assessment

This goes back to our earlier comments about the definition of a Real-Time Assessment. It seems what the SDT is attempting to do is perform two different studies in this one requirement.

#### Compliance Monitoring Process

(3) ii. The Operational Planning Analysis is a study of the next day using forecasted data, transmission outage data, and generation outage data and can only attempt to see what may happen the next day. Given that statement, how can the RA be assured that it will exceed an IROL? Suggestion: change the “will exceed” to “may exceed.”

(3) iv. Remove the statement “or is expected to exceed any IROLs.” The Real-Time assessment should be limited to real-time time frame and should be extended to review the time between Real-Time Assessments.

#### Non Compliance

(3) i. Is the “time” that an Operational Planning Analysis or Real-Time Assessment was conducted sufficient enough indication that Operational Planning Analysis or Real-Time Assessment was conducted?

#### 204 Actions

(1) i. ATC is troubled by the term may be exceeded. How can an RA be required to perform action on a “may” situation? Suggestion would be to have the RA notify other RA along with members in the RA’s area that an IROL was not yet exceeded but the potential for an IROL to be exceeded was identified.

We would point out that there is no noncompliance level for the above concern so therefore should this may not be appropriate as a NERC standard.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>



<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Mark Fidrych</b>
<b>Organization</b>	<b>Western Area Power – CM</b>
<b>Industry Segment #</b>	<b>1</b>
<b>Telephone</b>	<b>970-461-7240</b>
<b>E-mail</b>	<b>Fidrych@wapa.gov</b>

- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

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***STD Commenter Information (For Groups Submitting Group Comments)***

**Name of Group:**

**Group Chair:**

**Chair Phone:**

**Chair Email:**

***List of Group Participants that Support These Comments:***

<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes       No

Comments The Voltage level appears too low, but some criteria needed to be established.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes       No  
 Comments

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9. Do you agree with the levels of non-compliance?

Yes  No

Comments The analyses and assess. require once/dy. In some circumstances, where system conditions do not change and the IROL has ample operating room, the requirements do not acknowledge that mode explicitly.

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments Under dynamic conditions this is impossible to accomplish.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes

No

Comments I agree with the concept, I think we need to spend some time on the multipliers.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45



**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

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- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

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The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
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These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
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The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.





**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      X  No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes                      X  No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

X  Yes                       No

Comments

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8. Do you agree with the compliance monitoring process?

X  Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

X  Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

X  Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                      X  No  
 Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

12. Other comments about Requirement 201: None

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes                       No  
 Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments: Propose sanctions are too severe. Suggest using multiples of 2's rather than 5's. I.e. the first group will be 2, 4, 6, 8 and the next group be 4, 6, 8, 10 etc.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

X  Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

X  Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

X  I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>William J. Smith</b>
<b>Organization</b>	<b>Allegheny Power</b>
<b>Industry Segment #</b>	<b>1</b>
<b>Telephone</b>	<b>(724) 838-6552</b>
<b>E-mail</b>	<b>wsmith1@alleghenypower.com</b>

<p><b>Key to Industry Segment #'s:</b></p> <ul style="list-style-type: none"> <li>1 – Trans. Owners</li> <li>2 – RTO's, ISO's, RRC's</li> <li>3 – LSE's</li> <li>4 – TDU's</li> <li>5 - Generators</li> <li>6 - Brokers, Aggregators, and Marketers</li> <li>7 - Large Electricity End Users</li> <li>8 - Small Electricity Users</li> <li>9 - Federal, State, and Provincial Regulatory or other Govt. Entities</li> </ul>
---

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>		<b>Group Chair:</b>
		<b>Chair Phone:</b>
		<b>Chair Email:</b>
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: We feel that this definition could be interpreted as including all facilities at and above 35kV whether they are transmission or not. The Bulk Electric System should be defined as 100kV and above network transmission system or lower voltage facilities that pass the FERC seven factor test.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: Determining the amount of load loss and restoration time in a pre-contingency study is not possible with the current real-time analysis tools.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: This definition would qualify the loss of a single industrial customer (greater than 300MWs) as a wide area impact. A wide area impact should be defined as the loss of multiple substations or facilities than result in multiple customer outages totaling 300MWs or greater.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments

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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No

Comments: Identifying the most vulnerable points of the Interconnected transmission system is an invitation to sabotage. System operating limits are appropriate for posting, but that subset of limits that are IROLs should not be identified publicly. This should be confidential information.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments Above 35 kV is OK, but I would prefer that the limit be above 59 kV.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments I would suggest the definition be changed to: The uncontrolled or unplanned successive loss of system elements triggered by an incident at any location. Cascading Outages result in Wide-Area Impacts, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments This definition does not contain any energy values. Taking this definition literally would mean if a system lost 10,000 MW and was able to restore it in 14 minutes (admittedly, a highly unlikely occurrence), the outage would not be considered to have a wide area impact. A better definition would include an energy component, for example, 75 MWh. The revised definition would read: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes or the loss of 75 MWh or more during a time interval of 15 minutes or less.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

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Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments Public posting should not be necessary as long as all entities that have a need to know the IROLs can have access to them.

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments I agree with OPS that 35kv is too low. This definition should define the level as 100 kV and above.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments:

I like this definition. Although 300 is an arbitrary number (why not 500 for example), I like the fact that it is quantitative and easily measurable – after the fact at

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

I agree with this definition. I would only add that we should try and focus on consistency. I think  $T_v$  is being used in other standards, so I would recommend that these definitions are either coordinated or that different variables are used.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments Having agreed with the definition above, I am inclined to agree here as well.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments

I recommend that the drafting team stays away from defining terms that are already defined. For example, I think that Generator Owner, Reliability Authority Area, and Transmission owner are already defined in the functional model. Also, I recommend that the drafting team communicate with other drafting teams and make sure that the definitions used here are consistent throughout the standards – Performance-reset Period for example

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes                       No

Comments

I agree with this in principle, but real life has shown that agreements on limits and processes are not always possible. I recommend that the drafting team adds a clause directing the RAs to use the process that results in the lower value for the limit if agreement can not be reached. They should keep using that limit until agreement is reached.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes                       No  
 Comments

I agree with this, but that was not the way I understood it when I read the standard. The "current value" to me means what this value is right now. I recommend the word "current" be changes to something like "set"

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments I recommend that the drafting team adds a clause directing the RAs to use the process that results in the lower value for the limit if agreement can not be reached. They should keep using that limit until agreement is reached. They should push for agreement.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

NO. I agree with the SDT that there is no reliability reason to support this.

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

Yes  No

Comments I agree with providing the system controllers with as much information as possible without overloading them. If the SDT believes that this information aggregated with all the other information System controllers get would not be too much to handle then I'll agree with this requirements.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes  No

Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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I believe the 1 minute limit is reasonable and stays in line with other standards under development.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments : I'm not sure that the Requirements of this standard represent technical content, but since I pretty much agree with the requirements so I checked box 1.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

I agree with the requirements of RAs as defined by this standard as long as my organization becomes an RA. If we cannot receive RA certification then I would not agree with the requirement because state regulatory issues do not allow my organization to transfer to someone else the RA responsibility defined here that we currently do..

20. Other Comments about this Standard:

See my comment to question 19. This is a major issue for us. Until I know who is and who isn't an RA, I will have trouble voting.

## Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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### Introduction:

The SDT received comments from 138 different people, as shown on the next pages. These people represent more than 70 different companies, all NERC Regions and 6 of the 9 Industry Segments. The Operate Within Limits SDT (OWL SDT) thanks all who participated for their time and efforts in providing valuable input to the refinement of this new standard. The SDT believes that the technical issues associated with this standard that were raised during the first ballot of this standard, have now been resolved.

### Changes Made to Bring a Common Understanding to the Identification of IROLs :

The OWL SDT met jointly with members of the Operating Limits Definition-Task Force and the Determine Facility Ratings (DFR) SDT at the request of the NERC Operating Committee to reach common agreement on the definition of IROLs and a generalized methodology for identifying which SOLs are further classified as IROLs. During this meeting, participants determined that the identification of IROLs is most easily accomplished when the SOLs are developed. The IROL-related information the industry indicated it wanted provided to real time operations personnel is typically identified during the various activities designed to identify SOLs.. Based on these observations, the participants in the joint meeting recommended moving the IROL identification and communication requirements from the Operate Within IROLs Standard to the DFR Standard and recommended soliciting industry feedback on the appropriateness of this move. In addition, the OLD-TF agreed to align its activities associated with SOLs and IROLs to that proposed in the revised DFR Standard.

The participants in the joint meeting agreed that the criteria used to determine whether an SOL is also an IROL is the same for both the planning and the operating horizon:

If exceeding the SOL results (or could result) in one of the following, then that SOL is also an IROL.

- Instability
- Uncontrolled separation
- Initiation of cascading outages

The DFR SDT has agreed to solicit feedback on the appropriateness of moving the requirement to identify and communicate IROLs from this standard to the DFR Standard.

### Balloting:

The SDT believes that this standard, or any other new standard, will not receive sufficient approval because many members of the Registered Ballot Pool voted 'no' on this standard for one of the following reasons, and many of these balloters have indicated that they will continue to vote 'no' until these issues have been resolved.

- **Continued Ambiguity about the Future of the Reliability Coordinator**

The Reliability Coordinator does not appear in the Functional Model, but the Functional Model Technical Document indicates that the Reliability Coordinator is expected to continue to exist. (From page 38 of the Functional Model Technical Document:

“As this paper explains, the lack of the Reliability Coordinator in the Functional Model should not imply that the RC won't exist. In fact, we expect it to.”

Having both Reliability Coordinators and Reliability Authorities with similar sets of rules is confusing and may lead to unclear lines of authority during real-time operations.

- **Financial Sanctions for Non-compliance Aren't Fully Supported**

## Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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While some Regional Compliance Programs use financial sanctions and feel that these are good tools for motivating compliance with NERC Standards, at least one Region is using letters without financial sanctions, and the member of that Region feel that the letters, by themselves, are good tools for motivating compliance with NERC Standards.

- **Field Testing**

The Compliance Templates for Operating Policies and Planning Standards all received field testing before they were implemented. Some industry participants expect that all new standards should be field tested before being implemented. There appear to be misunderstandings surrounding the responsibility for determining whether field testing should be conducted, as well as misunderstandings about the purpose of field testing as applied to new standards.

The OWL SDT will post the revised OWL Standard for review with the DFR Standard, but will delay balloting the OWL Standard until the above issues are resolved and the industry has reached consensus on the content of the DFR Standard.

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Commenter	Organization	Industry Segment								
		1	2	3	4	5	6	7	8	9
Rusty Foster				X						
Dan Boezio	AEP	X								
Anita Lee	AESO		X							
Dale McMaster	AESO		X							
Ken Skroback	AL Electric Coop	X								
Ken Githens	Allegheny Energy Supply					X				
William J. Smith	Allegheny Power	X								
Michael D. Zahorik	ATC	X								
Peter Burke	ATC	X								
Marv Landauer	BPA	X								
Ed Riley	CAISO		X							
Roger Westphal	City of Gainesville			X						
Alan Hale	City of Tallahassee					X				
Karl Kohlrus	City Water, Light & Power					X				
Bob Remley	Clay Electric Cooperative				X					
Bill Thompson	Dominion	X								
Jalal Babik	Dominion	X								
Craig Crider	Dominion	X								
Jack Kerr	Dominion	X								
Bill Thompson	Dominion	X								
Randy Hunt	Dominion- VA Power	X								
Don Reichenbach	Duke Energy	X								
Uma Gangadharan	Entergy	X								
Ed Davis	Entergy Services	X								
Sam Jones	ERCOT		X							
John Blazekovich	Exelon Corp	X	X			X	X			
Joe Krupar	Florida Municipal Power Agency			X						
Ed DeVarona	Florida Power & Light Co.	X								
Patti Metro	FRCC		X							
Linda Campbell	FRCC		X							
Doug Newbauer	GA System Operations	X								
Roger Hunnicutt	Gainesville Regional Utilities					X				
Phil Winston	Georgia Power Company			X						
David Majors	Georgia Power Company			X						
Mike Stafford	GRDA	X								
Dick Pursley	GRE		X							
Delyn Helm	GRE		X							
William F. Pope	Gulf Power			X						
David Kiguel	Hydro One Networks Inc.	X								
Roger Champagne	Hydro-Quebec TransÉnergie	X								
Don Tench	IMO		X							
Khaqan Khan	IMO		X							
Kathleen Goodman	ISO-NE		X							
Dan Stosick	ISO-NE		X							
Dave LaPlante	ISO-NE		X							
Garry Baker	JEA	X								
Mike Gammon	KCP&L	X								
Greg Woessner	Kissimmee Utility Authority			X						
Ben Sharma	Kissimmee Utility Authority			X						



**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Commenter	Organization	Industry Segment								
		1	2	3	4	5	6	7	8	9
Amy Long	Lakeland Electric	X								
Richard Gilbert	Lakeland Electric			X						
Paul Elwing	Lakeland Electric					X				
John Horakh	MAAC		X							
Joe Knight	MAPPCOR		X							
Tom Mielnik	MEC		X							
Dennis Kimm	MEC		X							
Robert Coish	MH		X							
Dave Jacobson	MH		X							
William Phillips	MISO		X							
Paul Koskela	MP		X							
Roger Brand	Municipal Electric Auth of GA	X								
Peter Lebro	National Grid	X								
Greg Campoli	New York ISO (NYISO)		X							
James Castle	New York ISO (NYISO)		X							
John Ravalli	New York ISO (NYISO)		X							
Michael C. Calimano	New York ISO (NYISO)		X							
Karl Tammar	New York ISO (NYISO)		X							
Robert Waldele	New York ISO (NYISO)		X							
Ralph Rufrano	New York Power Authority	X								
Al Adamson	NYSRC		X							
Brian Hogue	NPCC		X							
Guy Zito	NPCC		X							
John Swanson	NPPD		X							
Karl Tammar	NYISO		X							
Lawrence T. Hochberg	NYSRC		X							
Joe Roos	Ocala Electric Utility			X						
Peter Kuebeck	OG&E	X								
Todd Gosnell	OPPD		X							
Scott Moore	ORWG									
Larry Larson	OTP		X							
Jason Weiers	OTP		X							
Chifong Thomas	Pacific Gas & Electric	X								
Glenn Rounds	Pacific Gas & Electric	X								
Ben Morris	Pacific Gas & Electric	X								
Richard Kafka	PEPCO			X						
Bruce Balmat	PJM		X							
Phil Creech	Progress Energy - Carolinas	X								
Preston Pierce	Progress Energy Florida	X								
William Gaither	SC PSA	X								
Gene Delk	SCE & G	X								
Al McMeekin	SCE & G	X								
Lee Xanthakos	SCE & G	X								
Roman Carter	SCGEM					X	X			
Joel Dison	SCGEM					X	X			
Tony Reed	SCGEM					X	X			
Lloyd Barnes	SCGEM					X	X			
Clifford Shepard	SCGEM					X	X			
Lucius Burris	SCGEM					X	X			
Roger Green	SCGEM					X				

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Commenter	Organization	Industry Segment								
		1	2	3	4	5	6	7	8	9
Steve Wallace	Seminole Electric Cooperative				X					
Carter Edge	SEPA				X	X				
Lynna Estep	SERC		X							
Dan Kay	So Miss Elec Pwr Assoc	X								
Matt Ansley	Southern Co	X								
Marc Butts	Southern Company Services	X								
Raymond Vice	Southern Company Services	X								
Dan Baisden	Southern Company Services	X								
Jim Griffith	Southern Company Services	X								
Jim Viikinsalo	Southern Company Services	X								
Mike Miller	Southern Company Services	X								
Monroe Landrum	Southern Company Services	X								
Gwen Frazier	Southern Company Services	X								
Steve Williamson	Southern Company Services	X								
Rod Hardiman	Southern Company Services	X								
Jonathan Glidewell	Southern Company Services	X								
Dan Richards	Southern Company Services	X								
Mike Hardy	Southern Company Services	X								
Carl Monroe	SPP		X							
Ron Ciesiel	SPP		X							
Robert Rhodes	SPP		X							
Bob Cochran	SPS	X								
Ron Donahey	Tampa Electric Company			X						
Beth Young	Tampa Electric Company			X						
R. Peter Mackin	TANC	X								
Khagan Khan	The IMO		X							
Mike Clements	TVA	X								
Mark Creech	TVA									
Larry Goins	TVA									
Edd Forsythe	TVA									
Jennifer Weber	TVA									
Jerry Landers	TVA									
Al Corbet	TVA									
Kathy Davis	TVA									
Darrick Moe	WAPA		X							
Mark Fidrych	WAPA	X								
Allen Klassen	Westar	X								
Martin Trencé	XCEL		X							

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**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Name	Company	1	2	3	4	5	6	7	8	9
Dan Boezio	AEP	x								
Raj Rana	AEP	x		x		x	x			
Scott Moore	AEP	x								
Anita Lee	AESO		x							
Dale McMaster	AESO		x							
Ken Skroback	AL Elec Coop	x								
Ken Githens	Allegheny Energy					x				
William J. Smith	Allegheny Power	x								
Michael D. Zahorik	ATC	x								
Peter Burke	ATC	x								
Marv Landauer	BPA	x								
Don Gold	BPAT	x								
Don Watkins	BPAT	x								
James Murphy	BPAT	x								
Mike Viles	BPAT	x								
Richard Spence	BPAT	x								
Ed Riley	CA-ISO		x							
Roger Westphal	City of Gainesville			x						
Alan Gale	City of Tallahassee					x				
Rusty Foster	City of Tallahassee			x						
Karl Kohlrus	City Water, Light & Power					x				
Bob Remley	Clay Electric Cooperative				x					
Randy Hunt	Dominion – VA Pwr	x								
Bill Thompson	Dominion VA Power	x								
Craig Crider	Dominion VA Power	x								
Jack Kerr	Dominion VA Power	x								
Jalal Babik	Dominion VA Power	x								
Don Reichenbach	Duke Energy	x								
Uma Gangadharan	Entergy	x								
Ed Davis	Entergy Services	x								

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Sam Jones	ERCOT		x						
John Blazekovich	Exelon	x	x			x	x		
Joe Krupar	Florida Municipal Power Agency			x					
Ed DeVarona	Florida Power & Light Co.	x							
Linda Campbell	FRCC		x						
Patti Metro	FRCC		x						
Doug Newbauer	GA System Ops	x							
Roger Hunnicutt	Gainesville Reg Utl					x			
David Majors	Georgia Power Company			x					
Phil Winston	Georgia Power Company			x					
Mike Stafford	GRDA	x							
Delyn Helm	GRE		x						
Dick Pursley	GRE		x						
William Pope	Gulf Power Company			x					
Roger Champagne	H-Q TransEnergie	x							
David Kiguel	Hydro One Networks Inc.	x							
Don Tench	IMO		x						
Khagan Khan	IMO		x						
Dave LaPlante	ISO_NE		x						
Dan Stosick	ISO-NE		x						
Kathleen Goodman	ISO-NE		x						
Garry Baker	JEA	x							
Mike Gammon	KCP&L	x							
Ben Sharma	Kissimmee Utility Authority			x					
Greg Woessner	Kissimmee Utility Authority			x					
Amy Long	Lakeland Electric	x							
Paul Elwing	Lakeland Electric					x			
Richard Gilbert	Lakeland Electric			x					
John Horakh	MAAC		x						
Gerald Rheault	Manitoba Hydro	x		x		x	x		
Joe Knight	MAPPCOR		x						

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Dennis Kimm	MEC		x						
Dave Jacobson	MH		x						
Robert Coish	MH		x						
Tom Mielnik	MH		x						
William Phillips	MISO		x						
Paul Koskela	MP		x						
Roger Brand	Muni Elec Auth of GA	x							
Peter Lebro	National Grid	x							
James Castle	New York ISO (NYISO)		x						
Robert Waldele	New York ISO (NYISO)		x						
Brian Hogue	NPCC		x						
Guy Zito	NPCC		x						
John Swanson	NPDD		x						
Greg Campoli	NYISO		x						
John Ravalli	NYISO		x						
Karl Tammar	NYISO		x						
Ralph Rufrano	NYPA	x							
Al Adamson	NYSRC		x						
Lawrence T. Hochberg	NYSRC		x						
Joe Roos	Ocala Electric Utility			x					
Peter Kuebeck	OG&E	x							
Todd Gosnell	OPPD		x						
Jason Weiers	OTP		x						
Larry Larson	OTP		x						
Richard Kafka	Pepco			x					
Ben Morris	PG&E	x							
Chifong Thomas	PG&E	x							
Glenn Rounds	PG&E	x							
Bruce Balmat	PJM		x						
Phil Creech	Progress Energy – Carolinas	x							
Preston Pierce	Progress Energy Florida	x							

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Dan Kay	S Mississippi Elec Pwr Assoc	x								
William Gaither	SC Public Svc Auth	x								
Al McMeekin	SCE&G	x								
Gene Delk	SCE&G	x								
Lee Xanthakos	SCE&G	x								
Clifford Shepard	SCGEM					x	x			
Joel Dison	SCGEM					x	x			
Lloyd Barnes	SCGEM					x	x			
Lucius Burris	SCGEM					x	x			
Roger Green	SCGEM					x	x			
Roman Carter	SCGEM					x	x			
Tony Reed	SCGEM					x	x			
Steve Wallace	Seminole Electric Cooperative				x					
Carter Edge	SEPA				x	x				
Lynna Estep	SERC		x							
Matt Ansley	Southern Company	x								
Dan Baisden	Southern Company Services	x								
Dan Richards	Southern Company Services	x								
Gwen Frazier	Southern Company Services	x								
Jim Griffith	Southern Company Services	x								
Jim Viikinsalo	Southern Company Services	x								
Jonathan Glidewell	Southern Company Services	x								
Marc Butts	Southern Company Services	x								
Mike Hardy	Southern Company Services	x								
Mike Miller	Southern Company Services	x								
Monroe Landrum	Southern Company Services	x								
Raymond Vice	Southern Company Services	x								
Rod Hardiman	Southern Company Services	x								
Steve Williamson	Southern Company Services	x								
Carl Monroe	SPP		x							
Robert Rhodes	SPP		x							

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Ron Ciesiel	SPP		x																
Bob Cochran	SPS	x																	
Beth Young	Tampa Electric Company			x															
Ron Donahey	Tampa Electric Company			x															
R. Peter Mackin	Trans Agency of N CA	x																	
Al Corbet	TVA																		
Edd Forsythe	TVA																		
Jennifer Weber	TVA																		
Jerry Landers	TVA																		
Kathy Davis	TVA																		
Larry Goins	TVA																		
Mark Creech	TVA																		
Mike Clements	TVA	x																	
Darrick Moe	WAPA		x																
Lloyd Linke	WAPA		x																
Mark Fidrych	WAPA	x																	
Allen Klassen	Westar	x																	
Martin Trence	XCEL		x																



**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

**Questions about Definitions**

**1. Bulk Electric System**

The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Original Definition: Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

**Summary Consideration:** The industry comments clearly indicated that using '35 kV' as a threshold for the bulk electric system was aiming too low. There were many suggestions for improvements to this definition, and the suggestions to use the definition embedded in the 'Introduction to the Planning Standards' seems to meet most commenters' suggestions, with the addition of a sentence to indicate that specific types of radial transmission lines are not part of the bulk electric system.

**Bulk Electric System:** The bulk electric system is a term commonly applied to that portion of an electric utility system, which encompasses the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission lines serving only load with one transmission source are not included in this definition.

<b>'Yes' Responses</b>	
Michael Zahorik; ATC; #1	35 Kv seems rather low voltage. 50 or 100 Kv may be a better value.
Most commenters agreed with this observation. The revised definition uses 100 kV or higher as a threshold.	
Mark Fidrych; WAPA; #1	The Voltage level appears too low, but some criteria needed to be established.
Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold.	
R. Peter Mackin; TRANC; #1	Above 35 kV is OK, but I would prefer that the limit be above 59 kV.
Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold. This is the threshold already adopted for use in Planning Standards.	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
John Blazekovich; Exelon; 1,2,5,6	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
William Pope; Gulf Power Co; #3	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
<b>'No' Responses</b>	
Karl Kohlrus; City Water, Light & Power; # 5	The minimum voltage of a Bulk Electric System should be 100 KV
Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold.	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	We believe that 35 kV is too low for the Bulk Electric System. A more appropriate level would be 100 kV and above.
Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold.	
Lee Xanthakos; SCE&G; #1	I agree with OPS that 35kv is too low. This definition should define the level as 100 kV and above.
Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold.	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

threshold.	
Ken Githens; Allegheny Energy 5	We feel that this definition could be interpreted as including all facilities at and above 35kV whether they are transmission or not. The Bulk Electric System should be defined as 100kV and above network transmission system or lower voltage facilities that pass the FERC seven factor test.
<p>Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold.</p> <p>The FERC seven factor test which you provided to the SDT is a good guideline for distinguishing between distribution systems and systems that are other than distribution. The SDT will pass this recommendation on to the other SDT's that might be able to use the seven factor test.</p> <ol style="list-style-type: none"> <li>(1) Local distribution facilities are normally in close proximity to retail customers.</li> <li>(2) Local distribution facilities are primarily radial in character.</li> <li>(3) Power flows into local distribution systems; it rarely, if ever, flows out.</li> <li>(4) When power enters a local distribution system, it is not reconsigned or transported on to some other market.</li> <li>(5) Power entering a local distribution system is consumed in a comparatively restricted geographical area.</li> <li>(6) Meters are based at the transmission/local distribution interface to measure flows into the local distribution system.</li> <li>(7) Local distribution systems will be of reduced voltage.</li> </ol>	
Raj Rana; AEP; 1,3,5,6	35 kV is too low for inclusion in the bulk electric system definition. The rest of this definition is less descriptive than the current definition in the NERC Operating Manual and contradicts the definition used in the NERC Planning Standards since 1995. The current definition in the NERC Planning Standards should be used as a starting point. Also, any definition of the Bulk Electric System should include the concept that 'networked' facilities (as opposed to radial) make up the BES and generally operated at voltages 100 kV or greater. The definition of the BES should not confuse FERC accounting rules/definitions with the functionality of the facilities themselves.
<p>Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold. Note that the documents called, "Terms Used in Planning Standards" that was approved by the NERC BOT on Feb 20, 2002 and the document called, "Additional Terms and their Definitions as Used in the NERC Planning Standards" that was approved by the NERC BOT on June 14, 2002 did not include a definition for the term, 'Bulk Electric System". A different commenter submitted a comment indicating that there is a definition of Bulk Electric System embedded in the Introduction to the Planning Standards, dated July 1997. Had the SDT been aware of its existence, the SDT would have used this definition since it would have been the most recently approved NERC definition. The definition provided in the Introduction to the NERC Planning Standards is provided here. Note that this definition would not meet your needs of including a distinction between radial and networked facilities.</p> <p><b>Bulk Electric System:</b> The bulk electric system is a term commonly applied to that portion of an electric utility system, which encompasses the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher.</p> <p>The following definition is from the NERC Glossary of Terms, approved by the NERC EC and OC on July 16, 1996 and is the exact definition the IROL SDT posted with the 2<sup>nd</sup> and 3<sup>rd</sup> versions of this standard:</p>	

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<p><b>Bulk Electric System:</b> A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and bulk transmission system.</p>	
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, but added a sentence to the end of the definition to clarify that radial transmission lines are not considered part of the bulk electric system. This change supports your suggestions.</p>	
<p>Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2 Steve Wallace; Seminole Electric Coop ;#4 Amy Long; Lakeland Electric; #1 Richard Gilbert; Lakeland Electric; #3 Ron Donahey; Tampa Electric Company; #3 Beth Young; Tampa Electric Company ;#3 Roger Hunnicutt ; Gainesville Reg UtI; #5 Roger Westphal ;City of Gainesville; #3 Greg Woessner ;Kissimmee Utility Auth;#3 Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1 Ed DeVarona; Florida Power &amp; Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMPA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3</p>	<p>Bulk Electric System: A term commonly applied to the portion of an electric utility system that encompasses the interconnected electrical generation resources and the interconnected high voltage transmission system above 100 kV. Radial transmission lines serving only load with one transmission source are not included in this definition.</p>
<p>Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold and includes your suggested sentence about excluding radial transmission lines..</p>	
<p>William Smith; Allegheny Power; #1</p>	<p>We feel that this definition could be interpreted as including all facilities at and above 35kV whether they are transmission or not. The Bulk Electric System should be defined as 100kV and above network transmission system or lower voltage facilities that pass the FERC seven factor test.</p>
<p>Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold and includes a sentence to clarify that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system.</p> <p>The FERC seven factor test includes the following:</p> <ol style="list-style-type: none"> <li>(1) Local distribution facilities are normally in close proximity to retail customers.</li> <li>(2) Local distribution facilities are primarily radial in character.</li> <li>(3) Power flows into local distribution systems; it rarely, if ever, flows out.</li> <li>(4) When power enters a local distribution system, it is not reconsigned or transported on to some other market.</li> <li>(5) Power entering a local distribution system is consumed in a comparatively restricted geographical area.</li> <li>(6) Meters are based at the transmission/local distribution interface to measure flows into the local distribution system.</li> <li>(7) Local distribution systems will be of reduced voltage.</li> </ol> <p>It appears that the seven factor test would be most useful in identifying facilities that should be considered 'distribution', rather than for identifying facilities that should be considered 'bulk'. If rephrased, the concept of the FERC seven factor test could be useful in distinguishing between</p>	

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<b>distribution and non-distribution.</b>	
Ed Davis; Entergy Services; #1	The definition of Bulk Electric System seems to be hard to pin down. We suggest: Bulk Electric System: A term commonly applied to the portion of an electric utility system that encompasses the electrical high voltage transmission facilities above 100 kV and associated equipment, or as approved in a tariff filed with FERC, and generation resources connected to that transmission system.
Most commenters agreed that 35 kV is too low. The revised definition uses 100 kV or higher as a threshold.	
Several commenters objected to inclusion of any reference to a 'tariff' in the definition. Note that the SDT revised the standard so this term is no longer used, and the term has been removed from the list of defined terms associated with this standard.	
John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trencce; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	Portions of the transmission system that are operated radially below 100 kV should be excluded to avoid excessive data reporting that may be required for other standards that use this definition.
Agreed. The revised definition uses 100 kV or higher as a threshold and includes a sentence to clarify that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system.	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	Reference to a voltage class is fine, but the correct voltage class should be referenced. In the Introduction Section of the NERC Planning Standards the definition of Bulk Electric System contains 100 kV as the qualifier. Shouldn't this definition be consistent with this long-standing definition?
The SDT would have used this definition if they had been aware of its existence. Unfortunately, when the SDT did a 'search' with the NERC search engine of the NERC web site, seeking existing NERC defined terms, the search did not link to the definition of Bulk Electric System that appears in the Planning Standards. The definition in the Planning Standards is embedded in the document's Introduction, and isn't included in the official list of defined terms in either the "Terms Used in Planning Standards" that was approved by the NERC BOT on Feb 20, 2002 or the document called, "Additional Terms and their Definitions as Used in the NERC Planning Standards" that was approved by the NERC	

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<p><b>BOT on June 14, 2002.</b></p> <p>The revised definition starts with the definition of Bulk Electric System from the Introduction to the Planning Standards and includes a sentence to clarify that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system.</p>	
<p>Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2</p>	<p>Please drop the parenthetical expression – we would ask NERC and the industry to develop “standard” definitions of the common terms to be used by the all standard drafting teams.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system.</p> <p>Because the SDT’s are working in parallel, and because the standards are being developed in a serial rather than sequential order, it is not practical to have a pre-defined set of terms for use by all SDT’s. The SDT’s have advised the SAC of the need to ensure coordination of terminology and definitions between SDT’s.</p>	
<p>Anita Lee; AESO; #2</p>	<p>The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.</p>
<p><b>Please see the response provided to the ISO/RTO members.</b></p>	
<p>Chifong Thomas; PG&amp;E; #1 Glenn Rounds; PG&amp;E; #1 Ben Morris; PG&amp;E; #1</p>	<p>Please delete the parenthesis and add, “the operation of which would impact the operation of the Interconnection System of the Region, or as approved by a tariff filed with FERC”. The operation of a Bulk Electric System should have impacts on the operation of the Regional Interconnected System. In most systems in WECC, 35 kV would be considered distribution voltage.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p> <p>Most commenters agreed with you that 35 kV was too low.</p>	
<p>James Murphy; BPAT;#1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1</p>	<p>The (above 35 kV or as approved in a tariff filed with FERC) should be changed to (200kV and above or as determined by region). This will avoid including many lines that are not part of the Bulk Electric System, but if they are significant the Regions can add them into consideration for IROL’s.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p> <p>Most commenters agreed with you that 35 kV was too low. The revised definition uses 100kV as a threshold.</p>	

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<p>Marv Landauer; BPA; #1</p>	<p>This definition, since it relates to IROLs, should not be tied to voltage, rather it should be based on function. I suggest the following: “An individual electric system facility is considered part of the Bulk Electric System if the availability of that element (whether it is in or out) impacts the capacity of an SOL or IROL.”</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power. While this change does not support your specific suggestion, the change conforms to the majority of the comments received.</p>	
<p>Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE; #2 Al Adamson; NYSRC; #2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC; #2 Guy Zito; NPCC; #2 Lawrence Hochberg; NYSRC; #2</p>	<p>This definition should be reliability-“performance based” and references to tariffs should be removed. The existing NPCC Definition for its Bulk Power System is; “The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.” Furthermore NPCC CP9 members listed feel that in no instance should a BES criteria encompass facilities at voltage levels less than 115 kV and strongly urges the eventual adoption of a “performance based” definition not a “voltage based” one.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>Greg Campoli; NYISO; #2 James Castle; NYISO; #2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2</p>	<p>This definition should be reliability-“performance based” and references to tariffs should be removed. For reference, we offer the existing NPCC Definition for its Bulk Power System is; “The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.” The NYISO strongly urges the eventual adoption of a “performance based” definition not a “voltage based” one.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>Khaqan Khan; IMO; #2</p>	<p>We feel that the definition of BES should not be tied up with FERC tariff. It should be upto the Reliability Authority to determine whether the facilities are impactive to the neighbors or not.</p>

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	<p>It is suggested to remove the definition-item within parenthesis. Resulting definition is as below: "A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system"</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>The BES should be defined based on performance (impact) on the power system, not a pre-defined voltage level. Suggest using a definition similar to NPCC "BULK POWER SYSTEM – The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances have a significant adverse impact outside of the local area" (i.e. Control Area). If a pre-defined voltage level is necessary, at a minimum, it should not be less than a 115 kV threshold.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>Jalal Babik; Dominion VA Power; #1          Craig Crider; Dominion VA Power; #1          Jack Kerr; Dominion VA Power; #1          Bill Thompson; Dominion VA Power; #1</p>	<p>By this definition, a Bulk Electric System could be as small as the transmission system covered by the OATT of the smallest "electric utility". This interpretation is not consistent with the usage of the term in the definition of IROL that appears in the revised Policy 9 currently being balloted by the Standing Committees.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>Alan Gale; City of Tallahassee; #5          Rusty Foster; City of Tallahassee; #3</p>	<p>Suggested Definition:          Bulk Electric System: A term commonly applied to the portion of the electric system used in the transport of power in inter-utility transactions.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>Richard Kafka, Pepco #3</p>	<p>While FERC may approve nearly any voltage level as "transmission," that does not qualify the facility as part of the bulk electric system. Regional practices and expected power flows can be used to distinguish between bulk and local electric facilities. The Regional Reliability Council should have authority to part of the bulk electric system if the facility owner does not voluntarily consider a facility to be such.</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load</p>	



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<p>with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>John Horakh; MAAC; #2</p>	<p>The parenthetical portion of the definition is too inclusive in specifying what makes up the “high voltage transmission system”. It requires all lines “above 35 kV or as approved in a tariff filed with FERC” to be included as part of the Bulk Electric System. Many lines that would fit this specification are indeed “transmission” rather than “distribution”, but they may not be part of the BULK transmission, i.e., the transmission that affects the overall reliability of the interconnected systems. Such “non-bulk” transmission lines could be called “subtransmission” or “underlying transmission” or “local transmission”. Many lines above 35 kV fall into this “non-bulk” category. Also, FERC tariff filings may limit lines to voltage levels above 35 kV, but may still contain many “non-bulk” transmission lines in order that such lines may receive proper regulatory treatment. In those cases, an entity would have no choice but to consider those “non-bulk” lines as part of the Bulk Electric System.</p> <p>The definition should be corrected by either of the following:</p> <ul style="list-style-type: none"> <li>a. Delete the parenthetical portion, OR,</li> <li>b. Change the parenthetical portion to the following – “(above 35 kV or as defined in a publicly available document)”. This would still allow the FERC filing to be used to limit and define the Bulk Electric System, IF APPROPRIATE. If further limiting is needed, this would allow an entity to produce, and make publicly available, another document to define the Bulk Electric System.</li> </ul>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p>	
<p>Ed Riley; CA-ISO; #2</p>	<p>Please drop the parenthetical expression as it is not applicable in Canada – we would ask NERC and the industry to develop “standard” definitions of the common terms to be used by the all standard-drafting teams. Could we use the definition of transmission out of FERC Order 888?</p>
<p>The SDT adopted the definition of Bulk Electric System that was used in the Introduction to the Planning Standards, and added a qualifying sentence to indicate that radial transmission lines serving only load with one transmission source are not considered part of the bulk electric system. This definition uses 100kV as a threshold for bulk power.</p> <p>Because the SDT’s are working in parallel, and because the standards are being developed in a serial rather than sequential order, it is not practical to have a pre-defined set of terms for use by all SDT’s. The SDT’s have advised the SAC of the need to ensure coordination of terminology and definitions between SDT’s.</p>	

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**2. Cascading Outage**

Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Original Definition: Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**Summary Consideration:** Because we've agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. All comments on the draft definition have been forwarded to the Determine Facility Ratings SDT for consideration by that SDT.

<b>'Yes' Responses</b>	
William Pope; Gulf Power Co; #3 Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	We generally agree with the new definition. However, we want to point out that in some very large systems, such as Southern Company, that include large metropolitan areas there are substations that serve geographic areas with very large loads. There can be cases in such substations where a fault occurs and the breaker fails to operate. In this breaker-failure scenario, large loads can be dropped for a short period of time in a controlled fashion in order to prevent cascading outages or instability. Our concern relates to reporting this as a 'wide area impact' violation simply because it produces a loss of 300 MW, while being confined to a single substation or possibly even one or two large factories on a particular bus. We are aware that the cascading outage definition is 'magnitude and time' sensitive but we believe it should be tailored to allow rational management of local area outages of large substations if they are managed in a controlled manner.
Note that the Determine Facility Ratings SDT (DFR SDT) has taken over the task of trying to get industry consensus on the definition of Cascading Outages. The DFR SDT is adding the phrase, 'unplanned' to the definition, and removing the reference to a specific # of MW. These changes look like they support your position.	
Lee Xanthakos; SCE&G; #1	I like this definition. Although 300 is an arbitrary number (why not 500 for example), I like the fact that it is quantitative and easily measurable – after the fact at
Note that the Determine Facility Ratings SDT (DFR SDT) has taken over the task of trying to get industry consensus on the definition of Cascading Outages. The DFR SDT, and most industry commenters, do not support the inclusion of any # of MW in the definition of Cascading Outages.	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	In concept this is OK, however, in current practice,

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	<p>simulation methods do not usually stress the system to the point of loss of load. Some of the mechanisms that might result in loss of load, such as collapse of an isolated island, may not be demonstrated with current modeling techniques. Current study techniques simulate only single contingency. Actual events which result in loss of 300 MW or more of networked system load are usually due to several contingencies occurring prior to system adjustment. There are too many possible scenarios to identify with current study resources. Such an approach is not recommended. Therefore the proposed criterion may not be practical to apply in studies.</p>
<p>Note that the Determine Facility Ratings SDT (DFR SDT) has taken over the task of trying to get industry consensus on the definition of Cascading Outages. Also note that the DFR SDT asked the industry if there was a need to study credible multiple contingencies and the industry commenters indicated this is done today, and there is a need to continue to study these. Therefore, the assumption that most study techniques are limited to single contingency scenarios may not be correct.</p>	
<p>Patti Metro; FRCC; #2  Linda Campbell ;FRCC ;#2  Steve Wallace; Seminole Electric Coop ;#4  Amy Long; Lakeland Electric; #1  Richard Gilbert; Lakeland Electric; #3  Ron Donahey; Tampa Electric Company; #3  Beth Young; Tampa Electric Company ;#3  Roger Hunnicutt ; Gainesville Reg Utl; #5  Roger Westphal ;City of Gainesville; #3  Greg Woessner ;Kissimmee Utility Auth;#3  Ben Sharma ;Kissimmee Utility Auth;#3  Garry Baker; JEA ;#1  Ed DeVarona; Florida Power &amp; Light Co. ;#1  Preston Pierce; Progress Energy Florida ;#1  Bob Remley; Clay Electric Cooperative; #4  Joe Krupar; FMPA; #3  Paul Elwing; Lakeland Electric; #5  Joe Roos; Ocala Electric Utility ;#3</p>	
<p>Mark Fidrych; WAPA; #1</p>	
<p>Karl Kohlrus; City Water, Light &amp; Power; # 5</p>	
<p>Roman Carter; SCGEM; #5, 6  Joel Dison; SCGEM; #5, 6  Tony Reed; SCGEM; #5, 6  Lloyd Barnes; SCGEM; #5, 6  Clifford Shepard; SCGEM; #5, 6  Lucius Burris; SCGEM; #5, 6</p>	

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Roger Green; SCGEM; #5, 6	
<b>'No' Responses</b>	
<p>John Swanson; NPDD; 2  Darrick Moe; WAPA; 2  Lloyd Linke; WAPA; 2  Paul Koskela; MP; 2  Larry Larson; OTP; 2  Dick Pursley; GRE; 2  Martin Trencce; XCEL; 2  Todd Gosnell; OPPD; 2  Robert Coish; MH; 2  Joe Knight; MAPPCCOR; 2  Tom Mielnik; MEC; 2  Dave Jacobson; MH; 2  Delyn Helm; GRE; 2  Jason Weiers; OTP; 2  Dennis Kimm; MEC; 2</p>	<p>The definitions of SOL, IROL, Local Area and Widespread area used in the NERC Operating Limit Definitions and Reporting document approved at the March 23 NERC OC meeting should be used instead of incorporating DOE definitions.</p>
<p>Although these terms were accepted by the OC, they did not receive the same level of industry debate that the new reliability standards process requires. In addition, the OLDTF's definitions do not match the definitions included in the Compliance Templates adopted by the NERC BOT.</p>	
John Blazekovich; Exelon; 1,2,5,6	<p>This definition should be consistent with the definition used by the Determine Facility Ratings, System Operating Limits &amp; Transfer Capability SDT.</p>
<p>Agreed. Because we've agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT.</p>	
Raj Rana; AEP; 1,3,5,6	<p>The proposed definition is unclear. Why the need to include load impacted and time requirements into the Cascading Outage definition? Is a 250 MW loss of load for 24 hours a cascading event? How about 1000 MW for 10 Minutes? The key thought of a Cascading Outage is that it is Unplanned and Uncontrolled outage over a wider area. The Facility Rating SDT is using as a definition of Cascading Outage is "The uncontrolled and unplanned successive loss of system elements triggered by an incident at any location." Is it really necessary to define cascading outage, if we can define as above when an SOL is to be considered an IROL? To be a cascading outage, multiple system elements must be involved and a series of uncontrolled events occur.</p>
<p>The SDT was trying to move the industry towards consensus on this term – in prior postings, industry commenters indicated a need to have objective elements that each RA could use to determine if an SOL should be classified as an IROL. The SDT was trying to add those objective elements.</p>	
<p>Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've</p>	

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forwarded the comments on this definition to the DFR SDT and asked them to consider including the 'wide area' concept in their definition.	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	There is a concern with some at BPA that the Definition of Cascading Outages will affect other standards. Specifically the use of "300 MW or more of networked system load for a minimum of 15 minutes" will not work with other standards. It has been suggested to use the current definition for Cascading Outages be used in the IROL definition.
Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.	
Michael Zahorik; ATC; #1	300 mw is to low a value. There are instances that this amount of load can be lost and there are no network implications.
Agreed. Most commenters indicated that 300 MW was too low a threshold value.	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2	The definition should read as follows: The uncontrolled successive loss of Bulk Power Transmission elements that propagate beyond a balancing area's boundaries.
Because the Functional Model assigns the RA and TOP responsibility for monitoring and operating within limits, the SDT was trying to find a definition that would align with the RA and TOP, rather than the Balancing Authority. In trying to determine if its limit will impact entities outside its boundaries, the TOP will be looking at its own boundaries, not those of the Balancing Authority.	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	Loss of 300 MW of load is not a measure or indication of cascading. Please change the definition to read, "The uncontrolled and unplanned successive loss of system elements triggered by an incident at any location. Cascading results in widespread electric service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies".
Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.	
Khaqan Khan; IMO; #2	It is not the threshold of 300 MW that qualifies an incident to cause a cascading outage. An option is to use a definition: "The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (balancing area's) boundaries"

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<p>Because the Functional Model assigns the RA and TOP responsibility for monitoring and operating within limits, the SDT was trying to find a definition that would align with the RA and TOP, rather than the Balancing Authority. In trying to determine if its limit will impact entities outside its boundaries, the TOP will be looking at its own boundaries, not those of the Balancing Authority.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>This does not appropriately indicate that the losses are “cascading,” not localized, not BES, etc. Agreed with the concept of “uncontrolled successive loss,” but do not agree that the 300 MW is an appropriate measure. The loss of 300 MW of load has nothing to do with cascading or uncontrolled successive losses. You may lose over 300 MW of load, but it poses no risk to the interconnection. We believe that the standard should be that the cascading outages propagate beyond the local area (i.e. Control Area). Specific, hard, concrete examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.</p>
<p>Because the Functional Model assigns the RA and TOP responsibility for monitoring and operating within limits, and for establishing those limits for use in real-time operations, the SDT was trying to find a definition that would align with the RA and TOP, rather than the Balancing Authority (or control area). In trying to determine if its limit will impact entities outside its boundaries, the TOP will be looking at its own boundaries, not those of the Balancing Authority or Control Area.</p> <p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard will require that the RA and PA have a methodology for developing SOL's that includes identification of which SOLs are also IROLs. The subset of SOL's that are to be considered IROLs are those that, if exceeded, could cause cascading outages, uncontrolled separation or instability.</p>	
<p>R. Peter Mackin; TRANC; #1</p>	<p>I would suggest the definition be changed to: The uncontrolled or unplanned successive loss of system elements triggered by an incident at any location. Cascading Outages result in Wide-Area Impacts, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies</p>
<p>Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.</p>	
<p>Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE; #2 Al Adamson; NYSRC; #2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC; #2</p>	<p>An event characterized by one or more of the following phenomena: the loss of power system stability cascading outages of circuits oscillations; abnormal ranges of frequency or voltage or both.</p> <p>NPCC participating members of CP9 (NYSRC) feel it is not the threshold of 300 MW that qualifies an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with</p>

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<p>Guy Zito; NPCC; #2 Lawrence Hochberg; NYSRC; #2</p>	<p>cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn't necessarily pose a risk to the interconnection. We believe that the standard specify that the cascading outages not propagate beyond the local area (i.e. Control Area). Moreover, the definition of "Cascading Outage" as outlined in Standard 200 is different from that defined in Standard 600 (Develop Facility Ratings, ...). It is recommended to follow a common definition as given in Std 600, including a minor modification, as follows. i.e."</p> <p>"The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area's) boundaries."</p> <p>In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.</p>
<p>Most commenters indicated that 300 MW was too low a threshold value.</p> <p>Because the Functional Model assigns the RA and TOP responsibility for monitoring and operating within limits, and for establishing those limits for use in real-time operations, the SDT was trying to find a definition that would align with the RA and TOP, rather than the Balancing Authority (or control area). In trying to determine if its limit will impact entities outside its boundaries, the TOP will be looking at its own boundaries, not those of the Balancing Authority or Control Area.</p> <p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (DFR Standard) will require that the RA and PA have a methodology for developing SOL's. The DFR Standard will also require that the SOL development methodology include the process used to identify the subset of SOL's that are also IROLs. The subset of SOL's that are to be considered IROLs are those that, if exceeded, could cause cascading outages, uncontrolled separation or instability. The contingencies used in identifying IROLs are the same contingencies used in developing SOLs, and are outlined in Standard 603.</p>	
<p>Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2</p>	<p>The NYISO believes that the standard should specify that the cascading outages not propagate beyond the local area (i.e. Control Area or balancing area). A threshold of 300 MW does not qualify an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn't necessarily pose a risk to the interconnection. We note that the definition of "Cascading Outage" as outlined in Standard 200 is different from that defined in Standard 600 (Develop Facility Ratings,). We recommend adopting a common definition as given in Std 600, including a minor modification, as follows. i.e."</p> <p>"The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area's) boundaries."</p> <p>In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed</p>

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	such that the whole industry can understand what an IROL is.
<p>Because the Functional Model assigns the RA and TOP responsibility for monitoring and operating within limits, and for establishing those limits for use in real-time operations, the SDT was trying to find a definition that would align with the RA and TOP, rather than the Balancing Authority (or control area). In trying to determine if its limit will impact entities outside its boundaries, the TOP will be looking at its own boundaries, not those of the Balancing Authority or Control Area.</p>	
<p>Most commenters indicated that 300 MW was too low a threshold value.</p>	
<p>The Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (DFR Standard) will require that the RA and PA have a methodology for developing SOL's. The DFR Standard also requires that the SOL development methodology include the process used to identify the subset of SOL's that are also IROLs. The subset of SOL's that are to be considered IROLs are those that, if exceeded, could cause cascading outages, uncontrolled separation or instability.</p>	
<p>Jalal Babik; Dominion VA Power; #1                  Craig Crider; Dominion VA Power; #1                  Jack Kerr; Dominion VA Power; #1                  Bill Thompson; Dominion VA Power; #1</p>	<p>The narrow definition may cause some issues for the operators, depending on how this standard is applied, and whether planned maintenance and a contingency becomes an issue under transfer conditions. The key will be if you can get out of the condition quickly-i.e. 30 minutes.</p> <p>If the cascading outages definition trickles over to the Planning side or to other Operations Standards, it could mean extra expenditures for the company. There are a number of places where double contingencies can cause large loss of load, but not cascading as defined as follows:</p> <p>Cascading (planning definition/old ops definition):                  The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies</p> <p>This definition gives much leeway. As long as you studied it, and you can tell how far the interruption spreads, it is not cascading. We could lose Northern Virginia or South Hampton Roads and still be in compliance. The loss of both 500 kV feeds to Yadkin and Fentress would drop over 300 MW.</p>
<p>The SDT working on the Determine Facility Ratings Standard and the SAR DT working on the Transmission Planning SAR have both indicated that the definition of cascading outages that was posted with this standard is not suitable for their use.</p>	
<p>Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.</p>	



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<p>William Smith; Allegheny Power; #1 Ken Githens; Allegheny Energy 5</p>	<p>Determining the amount of load loss and restoration time in a pre-contingency study is not possible with the current real-time analysis tools.</p>
<p>Most commenters did not agree with the proposed definition. Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.</p>	
<p>Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&amp;L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&amp;E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1</p>	<p>Using loss of load to imply a cascading event is not a logical link. If the point is to develop a limit for a reportable event, then call it a reportable event not a cascading outage. While this definition does set quantitative limits for cascading outages it doesn't really capture the link to cascading events. We would prefer the previous version of the definition, which while it was not as specific, captured the generic idea of cascading outages better. Trying to define cascading outages discretely may not be possible. Perhaps this definition is best left to the Determine Facility Ratings standard.</p>
<p>Most commenters did not agree with the proposed definition. Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.</p>	
<p>Carter Edge; SEPA ; #4 &amp; 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&amp;G; #1 Al McMeekin; SCE&amp;G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2</p>	<p>The MW amount should not determine whether it is a cascading outage. New definition proposal: The uncontrolled successive loss of networked system elements triggered by an incident at any location.  In response to the second paragraph above for question 2, we do not believe that the 300 MW/15 minute criteria should be used to automatically determine IROL Violations. However, reporting requirements could be based on this criteria with after the fact analyses to determine if an actual IROL violation occurred.</p>

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<p>Dan Kay; S Mississippi Elec Pwr Assoc; #1          Matt Ansley; Southern Company; #1          Uma Gangadharan; Entergy; #1</p>	
<p>Most commenters disagreed as you did with the 300 MW thresholds, and they have been removed.          Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.</p>	
<p>Ed Riley; CA-ISO; #2</p>	<p>The definition should read as follows: The uncontrolled successive loss of Bulk Power Transmission elements that propagate beyond a balancing area's boundaries and have adverse impacts of system frequency, load served, or voltage.</p>
<p>Because the Functional Model assigns the RA and TOP responsibility for monitoring and operating within limits, and for establishing those limits for use in real-time operations, the SDT was trying to find a definition that would align with the RA and TOP, rather than the Balancing Authority (or control area). In trying to determine if its limit will impact entities outside its boundaries, the TOP will be looking at its own boundaries, not those of the Balancing Authority or Control Area.          Most commenters indicated that 300 MW was too low a threshold value.</p>	
<p>Peter Burke; ATC; #1</p>	<p>The threshold of 300 MW is to low. While it is understandable that the DOE requires that a loss of this size should be reported as a disturbance, it should not be the threshold of a cascading outage. A suggested MW level would be somewhere between 1000 and 5000 MW.          Could the group elaborate on the 15 minutes. How would an RA be able to determine if the load was going to be lost for more than 15 minutes? Consider whether an SOL, that is determined to be an IROL, go back to an SOL if an entity, through some process, stated that the load would be restored within 10 minutes.</p>
<p>Most commenters indicated that 300 MW was too low a threshold value. Both the references to 300 MW and 15 minutes have been removed from the standard.</p>	
<p>John Horakh; MAAC; #2</p>	<p>The definition implies that Cascading Outages ALWAYS result in 300 MW of load loss for a minimum of 15 minutes. This result is likely, but not 100% sure.          The definition should be corrected by either of the following:          a. End the sentence with "at any location." and delete the remainder, OR,          b. Same as a. above, and add the following sentence – "Cascading Outages will likely have a Wide-Area Impact". Note that Wide-Area Impact is separately defined to include the 300 MW / 15 minute criteria.</p>
<p>Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've</p>	

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forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.	
Richard Kafka; Pepco; #3	Add the term "or has a Wide-Area Impact."
Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.	
Anita Lee; AESO; #2	The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.
Please review the response to the ISO/RTO Council's comments.	
Ed Davis; Entergy Services; #1	Cascading Outages is another term that is hard to define. Cascading Outage should be define in terms of the successive loss of system elements for which we suggest the definition be changed to:  Cascading Outages: The uncontrolled successive loss of <u>networked</u> system elements triggered by an incident at any location that results in <u>the operation of more than 4 relays and the loss 300 MW or more of networked system load</u> for a minimum of 15 minutes.
Most industry commenters disagreed with the thresholds (300 MW for 15 min) suggested in the last version of the standard.  Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.	
Marv Landauer; BPA; #1	This definition might be appropriate for the definition of an IROL but it does not fit with the other uses for the term (such as in the performance table). I suggest that this definition be removed and the words from this definition moved into the definition of an IROL in place of the words "cascading outages".
Most industry commenters disagreed with the thresholds (300 MW for 15 min) suggested in the last version of the standard. Members of the Transmission Plans SAR DT and the Determine Facility Ratings SDT have indicated that the definition of Cascading Outages in the last posting of this standard will not meet their needs.  Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.	
<b>Other Comments</b>	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA	For a large electric system that fluctuates between 15,000 MW to 29,000 MW in any given day, TVA feels that the loss of 300MW would not cause uncontrolled successive loss of system elements. We would prefer a Percentage of System Load rather than a hard number.

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Mark Creech; TVA Kathy Davis; TVA	
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Most industry commenters disagreed with the thresholds (300 MW for 15 min) suggested in the last version of the standard.

Note that because the IROL SDT has agreed to delay balloting this IROL standard until after the Determine Facility Ratings (DFR) standard has been balloted, the IROL SDT has transferred responsibility for refining the definition of Cascading Outages to the DFR SDT. Note that we've forwarded the comments on this definition to the DFR SDT and asked them to consider these comments in making their revisions to their definitions.

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**3. T<sub>v</sub>**

Several balloters indicated a preference for a definition of T<sub>v</sub> that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to T<sub>v</sub>. Do you agree with the revised definition?

**Original Definition:** T<sub>v</sub> : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable. T<sub>v</sub> may not be greater than 30 minutes.

**Summary Consideration:** Most industry commenters supported this revision. There were some suggestions for minor changes, and these have been adopted. The SDT added the phrase, "Interconnection Reliability Operating Limit" in front of, "T<sub>v</sub>" to clarify that the T<sub>v</sub> being defined is just the T<sub>v</sub> used with IROLs. This will enable the Balance Resources and Demand SDT to use the T<sub>v</sub> concept for frequency-related limits. The SDT also replaced the word, 'may' with 'shall.'

**Revised Definition:** IROL T<sub>v</sub> : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable. T<sub>v</sub> may (shall) not be greater than 30 minutes.

Note that the requirement to identify the subset of SOLs that are IROLs was moved to the 'Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard'. The definition of IROL T<sub>v</sub> was modified as noted above to conform to the industry's suggestions for improvements, and was then transferred to the DFR Standard.

<b>'Yes' Responses</b>	
Peter Burke; ATC; #1	ATC supports the position that an IROL should not be exceeded by more than 30 minutes.
<b>Most industry commenters agreed with this change.</b>	
Lee Xanthakos; SCE&G; #1	I would only add that we should try and focus on consistency. I think T <sub>v</sub> is being used in other standards, so I would recommend that these definitions are either coordinated or that different variables are used.
<b>Agreed. The definition of T<sub>v</sub> has been modified so that its concept can be used by other SDT's. The revised definition uses the phrase, "IROL T<sub>v</sub>", rather than just "T<sub>v</sub>".</b>	
Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2 Steve Wallace; Seminole Electric Coop ;#4 Amy Long; Lakeland Electric; #1 Richard Gilbert; Lakeland Electric; #3 Ron Donahey; Tampa Electric Company; #3 Beth Young; Tampa Electric Company ;#3 Roger Hunnicutt ; Gainesville Reg Utl; #5 Roger Westphal ;City of Gainesville; #3 Greg Woessner ;Kissimmee Utility Auth;#3 Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1 Ed DeVarona; Florida Power & Light Co. ;#1	This definition provides guidelines to the RA for establishing limits and implementation of mitigation plans. For clarification, If an entity (Reliability Authority, Balancing Authority, Transmission Operator, etc...) is going to report an SOL to the RA and the RA will make the determination as to whether or not the SOL is indeed an IROL, should the clock not start until the determination is made by the RA? What happens if the RA takes 20-30 minutes trying to determine if an IROL exists?

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<p>Preston Pierce; Progress Energy Florida ;#1          Bob Remley; Clay Electric Cooperative; #4          Joe Krupar; FMPPA; #3          Paul Elwing; Lakeland Electric; #5          Joe Roos; Ocala Electric Utility ;#3</p>	
<p>The RA is expected to have the capability of observing real-time values against IROLs, so the RA should always know whether a limit is an IROL. The definition of an IROL has been modified to make it easier to identify IROLs. The duration of an IROL event is measured from the point in time where the limit is first exceeded for at least 30 continuous seconds and ends at the beginning of the continuous 30 seconds in which the value returns to within the Interconnection Reliability Operating Limit.</p>	
<p>Ralph Rufrano; NYPA; #1          David Kiguel; Hydro One Networks Inc.; #1          Roger Champagne; H-Q TransÉnergie; #1          Greg Campoli; New York ISO (NYISO); #2          Peter Lebro; National Grid; #1          Kathleen Goodman; ISO-NE; #2          Dan Stosick; ISO-NE;#2          Al Adamson; NYSRC;#2          Khagan Khan; The IMO Ontario; #2          Brian Hogue; NPCC;#2          Guy Zito; NPCC;#2          Lawrence Hochberg; NYSRC; #2          James Castle; NYISO ;#2          John Ravalli; NYISO; #2          Karl Tammar; NYISO; #2          Robert Waldele; NYISO; #2          Michael Calimano; NYISO; #2</p>	<p>NPCC participating CP9 members participating (NYSRC) (NYISO) agree that the Tv should be limited to 30 mins. However the last sentence should read Tv shall not be greater than 30 minutes.</p> <p>Add discussion to Q&amp;A document to give rationale as to why Tv under 30 minutes is required.</p>
<p>The definition was changed to replace the word, 'may' with 'shall' as suggested.          The Q&amp;A document already includes a rationale for allowing T<sub>v</sub> to be set lower than 30 minutes.</p>	
<p>John Swanson;NPDD;2          Darrick Moe;WAPA;2          Lloyd Linke;WAPA;2          Paul Koskela; MP; 2          Larry Larson; OTP; 2          Dick Pursley; GRE; 2          Martin Trence; XCEL; 2          Todd Gosnell; OPPD; 2          Robert Coish; MH; 2          Joe Knight; MAPPCOR; 2          Tom Mielnik; MEC; 2          Dave Jacobson; MH; 2</p>	<p>The definitions of SOL, IROL, Local Area and Widespread area used in the NERC Operating Limit Definitions and Reporting document approved at the March 23 NERC OC meeting should be used instead of incorporating DOE definitions.</p>

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Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
Although these terms were accepted by the OC, they did not receive the same level of industry debate that the new standards process requires. In addition, the OLDTF's definitions do not match the definitions included in the Compliance Templates adopted by the NERC BOT.	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	When would the clock start? When the SOL is reported, after the RA determination that it is an IROL, or after the RA tells the reporting entity that it is an IROL? I recommend not starting the 30 minute clock until after the RA determines it is an IROL.
The RA is expected to have the capability of observing real-time values against IROLs, so the RA should always know whether a limit is an IROL. The definition of an IROL has been modified to make it easier to identify IROLs. The duration of an IROL event starts when a limit has been exceeded for a minimum of 30 seconds, this is to preclude penalties associated with telemetry errors.	
Ken Githens; Allegheny Energy 5	However, the standard needs to define acceptable risks.
The requirement to identify which SOLs are also IROLs was moved to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (DFR Standard). The DFR Standard includes a requirement that the methodology for determining SOLs (and for determining which subset of SOLs are IROLs), be shared with other RAs and also requires the methodology owner to be responsive to any technical comments received on that methodology. This should facilitate RAs working together to determine what constitutes 'acceptable risk'.	
Karl Kohlrus; City Water, Light & Power; # 5	
Michael Zahorik; ATC; #1	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
William Pope; Gulf Power Co; #3	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2	
William Smith; Allegheny Power; #1	

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Mark Fidrych; WAPA; #1	
Anita Lee; AESO; #2	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
R. Peter Mackin; TRANC; #1	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1	



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Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
Kathleen Goodman; ISO-NE; #2	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
Khaqan Khan; IMO; #2	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
Ed Riley; CA-ISO; #2	
Ed Davis; Entergy Services; #1	
John Horakh; MAAC; #2	
Richard Kafka; Pepco; #3	
<b>'No' Responses</b>	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	If IROLs are truly significant interconnection events, then 30 minutes for Tv is probably a good value. However, if the definition of IROL stays with the proposed limits of 300 MW of load, then 30 minutes may be too short.
Agreed. Many commenters indicated that the definition of an IROL needed modification – and it has been changed to focus on the possible impact to the bulk electric system, rather than a quantity of MW. This change supports the concept of 'wide area' as defined in the newly approved compliance templates.	
John Blazekovich; Exelon; 1,2,5,6	Allowing an "acceptable time" of a Interconnection Reliability Operating Limit appears to be inconsistent with the definition of an IROL. If an IROL leads to instability, uncontrolled separation or cascading outage it seems to be unacceptable to allow any time limits to be associated with an IROL violation (i.e. any time spent over an IROL should be a violation).
Agreed. The intent of the standard is to prevent ever exceeding an IROL for any length of time. The SDT recognizes that there may be two different types of IROLs – those that result from an incident (such as an airplane that takes out a series of parallel transmission lines) and those that result from evolving conditions (such as the gradual increase in voltage limits resulting from heavy loads). The RA is	

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expected to prevent exceeding IROLs that may result from evolving conditions – and the RA is expected to mitigate an incident of exceeding an IROL that results from an incident. This change should make it easier for an RA to identify its IROLs.

Raj Rana; AEP; 1,3,5,6

How do you consistently define what risk is acceptable and what risk is not? How do we ensure all the RA's evaluate risk using the same criteria and assessment process? The upper limit of 30 minutes is not a problem. However, why would any entity select a  $T_v$  less than 30 minutes? Shouldn't the  $T_v$  concept require you to take immediate action, if studies show that exceeding this IROL could lead to system instability or collapse? An entity should not be allowed to operate such that the occurrence of the next contingency results in a cascading blackout. Under such a scenario, the entity needs to take immediate action as soon as it is identified that they are in such a situation, not wait 30 minutes or wait until the contingency occurs. The problem with this Standard in its current form is that it has watered down an IROL event by tying it to loss of 300 MW of load. For a large system, that may be the loss of only 2 or 3 facilities or less. And it could include events that do not threaten the Interconnection. We would suggest that a  $T_v$  of no greater than 30 minutes is adequate for a SOL violation, but may be totally inadequate for a true IROL.

The requirement to identify which SOLs are also IROLs was moved to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (DFR Standard). The DFR Standard includes a requirement that the methodology for determining SOLs (and for determining which subset of SOLs are IROLs), be shared with other RAs and also requires the methodology owner to be responsive to any technical comments received on that methodology. This should facilitate RAs working together to determine what constitutes 'acceptable risk'.

The DFR Standard includes a list of criteria that all System Operating Limits must meet. This should ensure that all SOLs (and IROLs) are established in a manner that ensures that, as long as the system is operated within the specified limits, the system will not suffer instability, cascading outages, or uncontrolled separation. The criteria for establishing SOLs includes things such as the number and types of contingencies that must be considered, definition of assumptions used in establishing SOLs, etc.

The DFR Standard includes a requirement that the methodology for determining SOLs (and for determining which subset of SOLs are IROLs), be shared with other RAs and also requires the methodology owner to be responsive to any technical comments received on that methodology. This should facilitate RAs working together to determine what constitutes 'acceptable risk'.

WECC already has many IROL's that are set at 20 minutes. The  $T_v$  for these limits is set to ensure that the system operators respond before the impact to reliability is unacceptable. In the WECC region, a technical committee establishes the 'base' set of IROLs for the entire interconnection – and the  $T_v$  is based on the risk to the interconnection of exceeding the IROL.

Note that there was not support for using the threshold of a loss of 300 MW of load for 15 minutes. The revised standard reflects adoption of the definition of widespread that was included in the templates just approved by the NERC BOT.

This standard doesn't suggest that anyone wait 30 minutes to resolve an instance of exceeding an IROL – this standard requires that actions be taken to Prevent instances of exceeding an IROL.

The industry has indicated that they do not want any IROL  $T_v$  greater than 30 minutes, and that language is reflected in this standard.

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**4. Wide Area Impact**

Several balloters indicated a continued misunderstanding of the difference between ‘wide area impact’ and ‘local area’. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was ‘widespread’. (Note that while the term, ‘wide area impact’ is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

**Original Definition: Wide Area Impact:** The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

**Summary Consideration:** The SDT endorses the definition of Wide Area that was recently approved by the NERC BOT with the new compliance templates, but recommends deleting the last phrase of the definition and substituting RA for RC. (The last phrase of the definition provides one use of the term ‘wide area’ – but the use cited is not the only use of the term ‘wide area’.)

**Revised Definition: Wide-Area:** The entire Reliability Authority Area as well as that critical flow and status information from adjacent Reliability Authority Areas as determined by detailed system analysis or studies.

Yes Responses	
William Pope; Gulf Power Co; #3	See No. 2 above.
See response to No. 2.	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	Same concern as #2 above.
See response to #2.	
Lee Xanthakos; SCE&G; #1	Having agreed with the definition above, I am inclined to agree here as well.
While several commenters did agree with this definition, many others did not. The SDT adopted a definition very similar to the definition recently approved by the NERC BOT in the new compliance templates.	
James Murphy; BPAT;#1	Remove definition if it is no longer used.

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<p>Mike Viles; BPAT; #1  Richard Spence; BPAT; #1  Don Watkins; BPAT; #1  Don Gold; BPAT; #1  Marv Landauer; BPAT; #1</p>	
<p>The SDT adopted the definition very similar to the one recently approved by the NERC BOT in the new compliance template. The term, 'wide area,' is used in the revised standard.</p>	
<p>John Horakh; MAAC; #2</p>	<p>The definition uses the expression "networked system load", which implies that "single source fed system load" is excluded. Therefore, we would conclude that the loss of 300 MW or more of "single source fed system load" does not have "Wide Area Impact". Is that the intent of the definition?</p>
<p>The original intent was to exclude single source fed system loads.</p>	
<p>Karl Kohlrus; City Water, Light &amp; Power; # 5</p>	
<p>John Blazekovich; Exelon; 1,2,5,6</p>	
<p>Patti Metro; FRCC; #2  Linda Campbell ;FRCC ;#2  Steve Wallace; Seminole Electric Coop ;#4  Amy Long; Lakeland Electric; #1  Richard Gilbert; Lakeland Electric; #3  Ron Donahey; Tampa Electric Company; #3  Beth Young; Tampa Electric Company ;#3  Roger Hunnicutt ; Gainesville Reg Utl; #5  Roger Westphal ;City of Gainesville; #3  Greg Woessner ;Kissimmee Utility Auth;#3  Ben Sharma ;Kissimmee Utility Auth;#3  Garry Baker; JEA ;#1  Ed DeVarona; Florida Power &amp; Light Co. ;#1  Preston Pierce; Progress Energy Florida ;#1  Bob Remley; Clay Electric Cooperative; #4  Joe Krupar; FMPA; #3  Paul Elwing; Lakeland Electric; #5  Joe Roos; Ocala Electric Utility ;#3</p>	
<p>Mark Fidrych; WAPA; #1</p>	
<p>Gerald Rheault; Manitoba Hydro; #1,3,5,6</p>	
<p>Roman Carter; SCGEM; #5, 6  Joel Dison; SCGEM; #5, 6  Tony Reed; SCGEM; #5, 6  Lloyd Barnes; SCGEM; #5, 6  Clifford Shepard; SCGEM; #5, 6</p>	

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Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	
Richard Kafka; Pepco; #3	
<b>'No' Responses</b>	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2 Anita Lee; AESO; #2	Wide Area Impact should be defined in relation to a BA or RA footprint. The measure should be that a wide area event occurs when an event has an impact in two or more BA or RA areas.
The SDT adopted the definition approved by the NERC BOT in the recently approved compliance templates, with minor modifications – and the new definition supports your recommendation.	
Peter Burke; ATC; #1	“Note that while the term, ‘wide area impact’ is not used in this standard, it is used in the definition of an IROL.”  The term ‘Wide area impact’ is in the list of definitions but that term does not appear anywhere in the definition of an IROL. If is not used in the standard or in the definition of an IROL then should it not be removed from the definitions list?
Many commenters asked that the term be defined because an understanding of ‘widespread’ or ‘wide area impact’ was critical to determining whether an SOL should be considered an IROL. Note that the term, ‘wide area’ is used in the revised standard.	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	For some systems, it is not uncommon to have loads of 300 MW or more located in a small area. Loss of 300 MW is therefore not an indication of wide area impacts. If implemented, such criteria could significantly increase workload and take resources away from work needed to identify, analyze, monitor and mitigate problems concerning IROLs, the violation of which could truly lead to cascading.
Agreed. Most commenters indicated that the suggested thresholds were too low and would be impractical and they have been dropped from the revised standard.	
William Smith; Allegheny Power; #1	This definition would qualify the loss of a single industrial customer (greater than 300MWs) as a wide area impact. A wide area impact should be defined as the loss of multiple substations or facilities than result in multiple customer outages totaling 300MWs or greater.
Agreed. Most commenters indicated that the suggested thresholds were too low and would be	

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<b>impractical and they have been dropped from the revised standard.</b>	
John Swanson;NPDD;2 Darrick Moe;WAPA;2 Lloyd Linke;WAPA;2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trencce; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	The definitions of SOL, IROL, Local Area and Widespread area used in the NERC Operating Limit Definitions and Reporting document approved at the March 23 NERC OC meeting should be used instead of incorporating DOE definitions.
<b>Although these terms were accepted by the OC, they did not receive the same level of industry debate that the new standards process requires. The SDT adopted the definitions included in the Compliance Templates adopted by the NERC BOT, with slight modifications to make them align with the Functional Model.</b>	

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<p>Greg Campoli; NYISO; #2  James Castle; NYISO ;#2  John Ravalli; NYISO; #2  Karl Tammar; NYISO; #2  Robert Waldele; NYISO; #2  Michael Calimano; NYISO; #2  Ralph Rufrano; NYPA; #1  David Kiguel; Hydro One Networks Inc.; #1  Roger Champagne; H-Q TransÉnergie; #1  Greg Campoli; New York ISO (NYISO); #2  Peter Lebro; National Grid; #1  Kathleen Goodman; ISO-NE; #2  Dan Stosick; ISO-NE;#2  Al Adamson; NYSRC;#2  Khagan Khan; The IMO Ontario; #2  Brian Hogue; NPCC;#2  Guy Zito; NPCC;#2  Lawrence Hochberg; NYSRC; #2  Khaqan Khan; IMO; #2</p>	<p>The NYISO agrees with the definition of Widespread Area from NERC OLDTF Report (that was validated by RCWG at its December/03 meeting and was accepted by NERC OC at its March 2004 meeting) be used in the Standard 200 as well. It is stated as below:</p> <p>Widespread Area An area that extends beyond any Local Area.</p> <p>Local Area The portion of a Widespread Area, whose boundaries are predetermined by appropriate analyses, where the impact of a Contingency or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a Widespread Area indicates significant impact to the Interconnection.</p> <p>OR an alternative option/suggestion is also proposed as follows:</p> <p>“The impact of an incident resulting in uncontrolled successive loss of system elements in networked system and where the consequences of such significant adverse impact cannot be contained within a defined area that can be demonstrated by studies.</p> <p>Wide area impact may also be defined correlating it to occurrences of event impacting more than one Reliability Authority.</p>
<p>Although these terms were accepted by the OC, they did not receive the same level of industry debate that the new standards process requires. The SDT adopted the definition of Wide Area included in the Compliance Templates adopted by the NERC BOT, with slight modifications to align with the Functional Model.</p>	
<p>Khaqan Khan; IMO; #2</p>	<p>An alternative recommended approach/measure is that a wide area impact be defined with respect to occurrence of event impacting more than two RAs or BAs areas.</p>
<p>This is the concept supported by the definition of Wide Area adopted by the NERC BOT in the newly approved compliance templates – and has been endorsed by the SDT for this standard.</p>	
<p>Michael Zahorik; ATC; #1</p>	<p>Again 300 Mw is too low. There needs to be some definition of network impact. ATC has areas where 300 Mw can be lost and that lost will not affect the network.</p>
<p>Agreed. Most commenters indicated that 300 MW was too low a threshold. The revised standard does not include any MW threshold.</p>	
<p>Raj Rana; AEP; 1,3,5,6</p>	<p>The DOE threshold was never intended to imply that it defined a wide area impact. The definition for wide area impact needs to include the concept that multiple facilities are impacted, and exceeds a large geographic footprint. For a large entity, 300 MW can</p>

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	<p>be as little as 1% of their peak load, arguably not a wide area impact for them. It make sense to set a quantitative threshold. However, such threshold should not be so limiting as for larger systems to be able to be exceeded by a single event.</p> <p>What is missing in this Standards is the concept that we need to prevent events that put the interconnection at risk. Instead this Standards is focusing on events within a single Control Area or Transmission Operator footprint. For convenience, a 300 MW threshold has been suggested, but there is no reference to impact to the interconnection. I guess one can argue, that if we force such severely constrained operations at the local level, then we should never get to the point of placing risks on the Interconnection. Is that the point of this standard? If so, then this is not about operating to IROL's but rather in operating well under SOL's so as to never approach an IROL.</p> <p>The definition continues to miss the mark and remains unclear. If the SDT see a need to define a "Wide Area Impact" using a arbitrary load at risk level, may be acceptable. But under the current definition, is the loss of a 5000 MW load area for 12 minutes a wide area impact? Per definition the answer is no, practicality says 'yes'.</p>
<p>The SDT adopted the definition of Wide Area included in the Compliance Templates adopted by the NERC BOT, with slight modifications to align with the Functional Model.</p>	
<p>This standard includes several elements aimed at supporting the Prevention of exceeding an IROL.</p>	
<p>Marv Landauer; BPA; #2</p>	<p>I do not agree that this is the appropriate definition of wide area impact. However I also do not see that this term is used anywhere in the document, so I suggest that it be removed entirely.</p>
<p>The SDT adopted the definition of Wide Area included in the Compliance Templates adopted by the NERC BOT, with slight modifications to align with the Functional Model.</p>	
<p>Many commenters requested that this definition be included because understanding whether exceeding a limit will have 'wide area' impact is critical to determining whether that limit should be an IROL. In addition, the revised standard does use the term, 'wide area'.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>The definition should capture the concept of Interconnection impact. Agreed with the concept of "uncontrolled successive loss," but do not agree that the 300 MW is an appropriate measure. The loss of 300 MW of load has nothing to do with cascading or uncontrolled successive losses. You may lose over 300 MW of load, but it poses no risk to the interconnection. We believe that the standard should be that the cascading outages propagate beyond the local area (i.e. Control Area). Specific, hard, concrete examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.</p>



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<p>Agreed. The SDT adopted the definition of Wide Area included in the Compliance Templates adopted by the NERC BOT, with slight modifications to align with the Functional Model.</p> <p>The requirement to have a documented methodology for determining SOLs (and the subset of SOLs that are IROLs) has been moved to the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard. The revised Standard 603 includes a set of criteria for establishing SOLs and consequently for establishing IROLs.</p>	
<p>Carter Edge; SEPA ; #4 &amp; 5                  William Gaither; SC Public Svc Auth; #1                  Ken Skroback; AL Elec Coop ; #1                  Roger Brand; Muni Elec Auth of GA; #1                  Phil Creech; Progress Energy - Carolinas; #1                  Gene Delk; SCE&amp;G; #1                  Al McMeekin; SCE&amp;G; #1                  Randy Hunt; Dominion – VA Pwr; #1                  Doug Newbauer; GA System Ops; #1                  Mike Clements; TVA; #1                  Don Reichenbach; Duke Energy; #1                  Lynna Estep; SERC; #2                  Dan Kay; S Mississippi Elec Pwr Assoc; #1                  Matt Ansley; Southern Company; #1                  Uma Gangadharan; Entergy; #1</p>	<p>See comments above</p>
<p>See responses to prior comments.</p>	
<p>R. Peter Mackin; TRANC; #1</p>	<p>This definition does not contain any energy values. Taking this definition literally would mean if a system lost 10,000 MW and was able to restore it in 14 minutes (admittedly, a highly unlikely occurrence), the outage would not be considered to have a wide area impact. A better definition would include an energy component, for example, 75 MWh. The revised definition would read: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes or the loss of 75 MWh or more during a time interval of 15 minutes or less.</p>
<p>The SDT adopted the definition of Wide Area included in the Compliance Templates adopted by the NERC BOT, with slight modifications to align with the Functional Model.</p>	
<p>Jalal Babik; Dominion VA Power; #1                  Craig Crider; Dominion VA Power; #1                  Jack Kerr; Dominion VA Power; #1                  Bill Thompson; Dominion VA Power; #1</p>	<p>See item 2 comments. Also, a dynamic instability can cause power system oscillations and equipment “swinging” over a large part of an interconnection and yet result in no loss of load. This situation could be caused by a single incident such as loss of a long line or a malfunction of a power system stabilizer and would definitely be considered to have a wide area impact on the reliability of the interconnection and the safety of interconnected equipment. The proposed definition is not applicable.</p> <p>The definition of Wide Area Impact is not consistent with the definition of Wide Area that appears in the</p>

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	revised Policy 9 currently being balloted by the Standing Committees.
The SDT adopted the definition of Wide Area that was approved by the Standing Committees and adopted by the NERC BOT in the new compliance templates. This is a minor modification to the definition included in Policy 9.	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	This term does not appear in the standard, why does it need to be defined here?  If it is felt that the definition must be included, then 300 MW is too small to be considered a wide area when compared to the interconnection.
The definition does appear in the revised standard. Many commenters indicated that using the 300 MW threshold was not appropriate and this reference has been dropped. The SDT has adopted the definition of Wide Area that was approved by the Standing Committees and adopted by the NERC BOT in the new compliance templates, with minor modifications to conform to the Functional Model.	
Ed Riley; CA-ISO; #2	Wide Area Impact should be defined in relation to a BA footprint. The measure should be that a wide area event occurs when an event has an impact in two or more BA areas.
The SDT has adopted the definition of Wide Area that was approved by the Standing Committees and adopted by the NERC BOT in the new compliance templates, with minor modifications to conform to the Functional Model.	
Ken Githens; Allegheny Energy 5	This definition would qualify the loss of a single industrial customer (greater than 300MWs) as a wide area impact. A wide area impact should be defined as the loss of multiple substations or facilities than result in multiple customer outages totaling 300MWs or greater.
The SDT has adopted the definition of Wide Area that was approved by the Standing Committees and adopted by the NERC BOT in the new compliance templates, with minor modifications to conform to the Functional Model.	
Ed Davis; Entergy Services; #1	We suggest the definition of Wide Area Impact should include a number of transmission providers, rather than MWs of load, and propose the following:  Wide Area Impact: The impact of a single incident resulting from the uncontrolled loss of networked system elements involving two or more transmission providers triggered by an incident at any location that results in the uncontrolled loss of 300 MW of networked system load for a minimum of 15 minutes.
The SDT has adopted the definition of Wide Area that was approved by the Standing Committees and adopted by the NERC BOT in the new compliance templates, with minor modifications to conform to the Functional Model.	

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<b>Other Comments</b>	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	See comments to question 2. Also, if "Wide Area " is implied and not used in this document, why have it at all?
The definition does appear in the revised standard. The SDT has adopted the definition of Wide Area that was approved by the Standing Committees and adopted by the NERC BOT in the new compliance templates, , with minor modifications to conform to the Functional Model.	

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**5. Other Definitions**

Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

**Summary Consideration:** The requirement to identify IROLs was shifted to the DFR Standard, and the definition of IROL is now being refined by the DFR SDT. The definition has been modified as follows and the DFR SDT is collecting comments on this definition:

**Interconnection Reliability Operating Limit** - a System Operating Limit, which, if violated, could result in instability, uncontrolled separation, or Cascading Outages affecting the bulk electric system.

Several commenters asked that a definition of 'shared facility' be provided, and the SDT revised the language in the standard so this term is not used, but its intent is clarified. A shared facility was intended to be a facility that crosses over one or more RA boundaries – so that multiple RAs have a portion of that facility within their RA Area.

Comments	
Karl Kohlrus; City Water, Light & Power; # 5	The definition of real-time data needs to make reference to how often it is collected (e.g. every 4 seconds) and how quickly it is reported (e.g. every 2 seconds).
As used in this standard, real-time data may be collected manually as well as through automatic collection systems. Requirements for tools are expected to be addressed in the Certification Standards.	
John Swanson;NPDD;2 Darrick Moe;WAPA;2 Lloyd Linke;WAPA;2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trencce; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	What is the maximum update interval for Real-time Data?
As used in this standard, real-time data may be collected manually as well as through automatic collection systems. Requirements for tools are expected to be addressed in the Certification Standards.	
John Blazekovich; Exelon; 1,2,5,6	Interconnection Reliability Operating Limit - “that adversely impact the reliability of the bulk electric system” should be removed from the definition to make it consistent with the definition of a SOL, which it is.

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<p>The definition of IROL is now being updated by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities SDT.</p>	
<p>Raj Rana; AEP; 1,3,5,6</p>	<p>The definition of an IROL Event Duration lists a reset time of 30 seconds. In 204(b)(1)(iii) the reset period is given as one minute. Whichever is the proper intent of the SDT, 30 seconds or 1 minute is too short of a period for the reset. This should be on the order of 5 minutes or so in order to indicate that stable operating conditions have been attained.</p> <p>The definition of an IROL continues to be unclear. For example: If an SOL (system Operating Limit) is a maximum permissible value so as to not exceed a facility rating or reliability criteria, then if 'everyone' was doing their job there should never be an occurrence of an IROL. There should never be a situation where the outage of the next facility will lead to 'instability, uncontrolled separation, or cascading outages'. Therefore, for the system to be exposed to a IROL, a more restricting System Operating Limit must have already been exceeded, unidentified, or ignored.</p>
<p>The reset time is 30 seconds and has been modified so it is constant in both places. The intent of the reset period was not to ensure that the system was 'stable' – the intent of the reset time was to ensure that any telemetry error was excluded.</p> <p>The definition of an IROL is now being updated by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities SDT</p>	
<p>Gerald Rheault; Manitoba Hydro; #1,3,5,6</p>	<ol style="list-style-type: none"> <li>1. The definition of "Interconnection Reliability Operating Limit" seems clear. However, addition explanation beyond the definition is required to shed light on the intended meaning and application of the term. NERC should consider the creation of a IROL reference document along the lines of the NERC "Transmission Transfer Capability" reference document.</li> <li>2. The impression is given that IROLs are simply a subset of SOL's as determined using current methods (e.g. study procedures). For some IROLS this will be true, i.e., where current methods demonstrate a specific transfer capability is limited by stability. However, in situations where thermal limits are lower than stability limits, it is not current practice (in MAPP) to expend additional effort to identify higher stability limits. A straight forward interpretation of the definition would require this additional effort. Is this NERC's intent?</li> <li>3. If so, NERC is introducing an additional requirement beyond current practice. This raises some important questions. How much extra effort is required and is it justified? Will monitoring IROLs derived in this way be fully</li> </ol>

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	<p>effective to prevent instability, uncontrolled separation, or cascading outages? For example, simultaneously exceeding several thermal limits (individually SOL's not IROLs ) may be approaching a voltage instability condition but this condition might not be recognized using the proposed IROL monitoring method. This is a good example of how an IROL might exist which will not be identified by current methods. The implications of the proposed IROL methodology have not been sufficiently explored and documented to ensure effective understanding and application within the electrical industry.</p>
<p>1. The IROL definition is now being updated by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities SDT and that SDT is developing a Technical Reference to identify how to identify IROLs.</p> <p>2. Yes, this is the intent.</p> <p>3. Existing Reliability Coordinators are expected to calculate and operate within IROLs today.</p>	
<p>Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2 Anita Lee; AESO; #2</p>	<p>A definition of "shared facilities" is requested</p>
<p>The SDT modified the standard so the term, 'shared facilities' is no longer used. A shared facility was intended to be a facility that crosses over one or more RA boundaries – so that multiple RAs have a portion of that facility within their RA Area.</p>	
<p>Peter Burke; ATC; #1</p>	<p>ATC brought up a concern during the last posting about the definition of Real-Time Assessment. It seems the SDT is attempting to solve two situations with this one definition.</p> <p>The first goal is to have the RA perform this assessment once every 30 minutes to determine if the current system, using that RA's pre-defined contingency list, is in an IROL situation.</p> <p>The second goal is to project over the time between this assessment and the next scheduled assessment to determine if the RA's area may be approaching or potentially in an IROL.</p> <p>The term Real-Time Assessment seems to support the first goal but, because of its name, does not seem to support the second goal. What if an RA only did the first goal of assessment and did not perform the second?</p> <p>Suggestions would be to:</p>

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	<p>Remove the term 'expected system condition' from the definition.</p> <p>Create a new term and standard addressing the requirement for the RA to look over the interval between Assessments and determine if the RA's system may be approaching or potentially in an IROL.</p>
<p>The definition of a Real-time Assessment is:  An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.</p> <p>The requirement for conducting a real-time assessment includes the following:  The Reliability Authority shall perform Real-time Assessments every 30 minutes to determine if its Reliability Authority Area is exceeding any Interconnection Reliability Operating Limits or is expected to exceed any Interconnection Reliability Operating Limits.</p> <p>The comments received from the industry have indicated support for both the definition and the requirement. Both clearly indicate that the assessment has two purposes – to determine if the RA's RA Area is exceeding any IROLs or is expected to exceed any IROLs. Part of developing an 'expectation' is to make a judgment about 'trends' from having conducted assessments every 30 minutes. For example, an RA is expected to notice if three successive Real-time Assessments indicate that a Facility subject to an IROL is creeping towards its IROL.</p>	
<p>Greg Campoli; NYISO; #2  James Castle; NYISO; #2  John Ravalli; NYISO; #2  Karl Tammar; NYISO; #2  Robert Waldele; NYISO; #2  Michael Calimano; NYISO; #2  Ralph Rufrano; NYPA; #1  David Kiguel; Hydro One Networks Inc.; #1  Roger Champagne; H-Q TransÉnergie; #1  Greg Campoli; New York ISO (NYISO); #2  Peter Lebro; National Grid; #1  Kathleen Goodman; ISO-NE; #2  Dan Stosick; ISO-NE; #2  Al Adamson; NYSRC; #2  Khagan Khan; The IMO Ontario; #2  Brian Hogue; NPCC; #2  Guy Zito; NPCC; #2  Lawrence Hochberg; NYSRC; #2</p>	<p>The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2). As an example, there is an inconsistency in definition of Transmission Operator, i.e. Definition of Transmission Operator should be updated to reflect definition stated in version 2 of the Functional Model – i.e. "operates or directs the operation". Definitions should be in one place not in each standard and definitely should not appear if they are in the Functional Model document.</p> <p>The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Std 200 as well. It is suggested to use the same definition with few modifications, as follows:</p> <p>" A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages."</p>
<p>The SDT dropped the terms already defined in the Functional Model from the list of terms defined for this standard.</p> <p>The definition of an IROL is now being updated by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities SDT.</p>	
<p>Jalal Babik; Dominion VA Power; #1  Craig Crider; Dominion VA Power; #1  Jack Kerr; Dominion VA Power; #1</p>	<p>The definition of IROL in this standard, "A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the</p>

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<p>Bill Thompson; Dominion VA Power; #1</p>	<p>bulk electric system.", is not consistent with the definition in the revised Policy 9 currently being balloted by the Standing Committees, "The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of the SYSTEM OPERATING LIMITS, which if exceeded, could expose a widespread area of the BULK ELECTRIC SYSTEM to instability, uncontrolled separation(s) or cascading outages". The definition in this standard loses the concept of wide area.</p>
<p>The definition of an IROL is now being updated by the Determine Facility Ratings, System Operating Limits and Transfer Capabilities SDT</p>	
<p>Al Corbet; TVA                  Jerry Landers; TVA                  Jennifer Weber; TVA                  Edd Forsythe; TVA                  Larry Goins; TVA                  Mark Creech; TVA                  Kathy Davis; TVA</p>	<p>Operational Planning Analysis which states "An analysis of the expected system conditions for the next day's operation and up to 12 months ahead."                  Currently, Reliability Coordinators have responsibility for real-time through next day and Control Areas have Operational Planning responsibilities up to 12 months.                  Page 6 of the "question and answers" address this definition and it says that the standard requires that an operational planning analysis be conducted at least once each day, looking ahead at the day ahead. But it appears to me that the definition implies more than next day. Maybe this is okay since the measure does limit it to next day.                  Most of the SERC RCs have responsibility for multiple control areas. TVA for example does operational planning for several months for the TVA control area, but our scope as RC for AEIC, BREC, EKPC is real-time through next day.                  Scope for RC is real-time through next day.                  There appears to be a shift in responsibility for this operational planning timeframe, if RC = RA.</p>
<p>The standard requires the RA to do an operational analysis each day for the day ahead. Other standards may be developed that require the RA to conduct an operational analysis that looks further ahead. The definition was intended to be useful to all standards that may be developed.                  There may be a need for another standard to address Operational Planning that takes place in an operating horizon that covers the timeframe between next day and 12 months.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>Generator Owner definition is not needed in this standard.</p>
<p>Agreed. The SDT removed all the definitions from the Functional Model.</p>	
<p>James Murphy; BPAT; #1                  Mike Viles; BPAT; #1                  Richard Spence; BPAT; #1                  Don Watkins; BPAT; #1                  Don Gold; BPAT; #1                  Marv Landauer; BPAT; #1</p>	<p>IROL "system operating limit" should be capitalized.                  IROL Event Duration: The time frame should match the standard, definition says 30 seconds, standard says 1 minute (204b1ii)                  Please include the SOL definition.</p>
<p>Agreed – the term, "system operating limit" has been capitalized in the revised standard.                  Agreed – the standard was modified to conform to the definition which states that the time frame is 30</p>	



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seconds.	
The Determine Facility Ratings SDT has developed a definition of SOL that has reached industry consensus. We will include it in the revised posting, but will also include a note to indicate that the definition was developed as part of the DFR Standard, and the OWL SDT will not revise this definition.	
Ed Riley; CA-ISO; #2	A definition of "shared facilities" is requested.
The standard has been revised so the term is no longer used. A shared facility was intended to be a facility that crosses over one or more RA boundaries – so that multiple RAs have a portion of that facility within their RA Area.	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	Uncontrolled separation – Cascading outages (new proposed definition above) that lead to the unplanned break-up of an interconnection.
The SDT's are trying to limit the number of defined terms to those that could be reasonably interpreted to mean different things to different entities. Uncontrolled separation seems to be self-evident. If other entities suggest that this term be defined, your definition will be suggested.	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	The definition of an IROL Event Duration lists a reset time of 30 seconds. In 204(b)(1)(ii) the reset period is given as one minute. Whichever the case, 30 seconds or 1 minute is too short of a period for the reset. This should be on the order of 5 minutes or so in order to indicate that stable operating conditions have been attained.
The reset time is 30 seconds and has been modified so it is constant in both places. The intent of the reset period was not to ensure that the system was 'stable' – the intent of the reset time was to ensure that any telemetry error was excluded.	
Lee Xanthakos; SCE&G; #1	I recommend that the drafting team stays away from defining terms that are already defined. For example, I think that Generator Owner, Reliability Authority Area, and Transmission owner are already defined in the functional model. Also, I recommend that the drafting team communicate with other drafting teams and make sure that the definitions used here are consistent throughout the standards – Performance-reset Period for example

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<p>Agreed. The definitions from the Functional Model have been dropped. The Director-Standards is trying to ensure that definitions are shared between drafting teams.</p>	
<p>William Pope; Gulf Power Co; #3</p>	<p>All definitions are acceptable.</p>
<p>Roman Carter; SCGEM; #5, 6          Joel Dison; SCGEM; #5, 6          Tony Reed; SCGEM; #5, 6          Lloyd Barnes; SCGEM; #5, 6          Clifford Shepard; SCGEM; #5, 6          Lucius Burris; SCGEM; #5, 6          Roger Green; SCGEM; #5, 6</p>	<p>All are improved and acceptable</p>
<p>Marc Butts; Southern Company Svcs; #1          Raymond Vice; Southern Company Svcs; #1          Dan Baisden; Southern Company Svcs; #1          Jim Griffith; Southern Company Svcs; #1          Phil Winston; Georgia Power Company; #3          Jim Viikinsalo; Southern Company Svcs; #1          Mike Miller; Southern Company Svcs; #1          Monroe Landrum; Southern Company Svcs; #1          Gwen Frazier; Southern Company Svcs; #1          Steve Williamson; Southern Company Svcs; #1          Rod Hardiman; Southern Company Svcs; #1          Jonathan Glidewell; Southern Company Svcs; 1          Dan Richards; Southern Company Svcs; #1          Mike Hardy; Southern Company Svcs; #1          David Majors; Georgia Power Company; #3</p>	<p>all are improved and acceptable</p>

**Questions about Requirement 201 — IROL Identification**

**6. IROLs for shared facilities**

Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

**201(b)(2)(i)** The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

**Consideration of Comments:** While many industry commenters agreed with this change, several commenters indicated this should be addressed in the Coordinate Operations Standard. The Coordinate Operations Standard does include the following requirement that RAs have a process, procedure or plan for activities that require coordination of actions involving more than one RA, and this should include establishing limits for 'shared' facilities:

(Coordinate Operations Standard 101 - Requirement 1)The Reliability Authority shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other Reliability Authorities to support interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other Reliability Authority Areas as well as those developed in coordination with other Reliability Authorities.

Several commenters also indicated that language in the newly approved Policies includes a requirement that if two RAs (RCs in current Policy) can't agree on a limit, they should both operate to the most limiting parameter. This change is within the scope of the SAR and has been included in the revised standard.

There were other comments asking for a definition of 'shared facilities'. With the transfer of the requirement to identify and communicate IROLs to the DFR Standard, this Operate within IROLs Standard does not include the term, 'shared' facilities.

<b>'Yes' Responses</b>	
Karl Kohlrus; City Water, Light & Power; # 5	In the event that there are different ratings of the same facility, the lower rating should always be used.
This requirement seems to be adequately addressed by the Coordinate Operations Standard, and has been dropped from this standard. Requirement 201 has been modified to reflect your suggestion.	
Raj Rana; AEP; 1,3,5,6	As per changes being made to NERC Policy 9, the default is you operate to the most conservative position. Thus if one RC says the facility has an IROL, all RCs need to respect and operate to that IROL.
This requirement seems to be adequately addressed by the Coordinate Operations Standard, and has been dropped from this standard. Requirement 201 has been modified to reflect your suggestion.	
Lee Xanthakos; SCE&G; #1	I agree with this in principle, but real life has shown that agreements on limits and processes are not

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	<p>always possible. I recommend that the drafting team adds a clause directing the RAs to use the process that results in the lower value for the limit if agreement can not be reached. They should keep using that limit until agreement is reached.</p>
<p>This requirement seems to be adequately addressed by the Coordinate Operations Standard, and has been dropped from this standard. Requirement 201 has been modified to reflect your suggestion.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>We do have a concern about having a formal process. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit.</p>
<p>This requirement seems to be adequately addressed by the Coordinate Operations Standard, and has been dropped from this standard.</p>	
<p>Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE; #2 Al Adamson; NYSRC; #2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC; #2 Guy Zito; NPCC; #2 Lawrence Hochberg; NYSRC; #2</p>	<p>Concern exists that the process required may be too formalized and could be a simple email or telephone call that requires affirmation and a formal legal agreement should not be required.</p>
<p>This requirement seems to be adequately addressed by the Coordinate Operations Standard, and has been dropped from this standard.</p>	
<p>Peter Burke; ATC; #1</p>	<p>It's important that the RA's come to some type of commonality when determining if a shared facility should be subject to an IROL. This approach of an agreed upon process should be able to achieve that goal. Would this SDT put out a technical reference on how this type of an agreed upon process should read, with suggested inclusions and reasons for those suggestions?</p>
<p>This requirement seems to be adequately addressed by the Coordinate Operations Standard, and has been dropped from this standard.</p>	

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<p>Marc Butts; Southern Company Svcs; #1  Raymond Vice; Southern Company Svcs; #1  Dan Baisden; Southern Company Svcs; #1  Jim Griffith; Southern Company Svcs; #1  Phil Winston; Georgia Power Company; #3  Jim Viikinsalo; Southern Company Svcs; #1  Mike Miller; Southern Company Svcs; #1  Monroe Landrum; Southern Company Svcs; #1  Gwen Frazier; Southern Company Svcs; #1  Steve Williamson; Southern Company Svcs; #1  Rod Hardiman; Southern Company Svcs; #1  Jonathan Glidewell; Southern Company Svcs; 1  Dan Richards; Southern Company Svcs; #1  Mike Hardy; Southern Company Svcs; #1  David Majors; Georgia Power Company; #3  Roman Carter; SCGEM; #5, 6  Joel Dison; SCGEM; #5, 6  Tony Reed; SCGEM; #5, 6  Lloyd Barnes; SCGEM; #5, 6  Clifford Shepard; SCGEM; #5, 6  Lucius Burris; SCGEM; #5, 6  Roger Green; SCGEM; #5, 6</p>	<p>This requirement seems to overlap the requirements in the Coordinate Operations standard. The two standards should be coordinated to avoid unnecessary repetition.</p>
<p>Agreed. It does appear that this requirement will be adequately addressed in the Coordinate Operations Standard's requirement 101 which requires RAs have a process, procedure or plan to address situations where coordination between RAs is required, and this should include establishing limits for 'shared' facilities.</p>	
<p>William Pope; Gulf Power Co; #3</p>	
<p>Gerald Rheault; Manitoba Hydro; #1,3,5,6</p>	
<p>Michael Zahorik; ATC; #1</p>	
<p>John Blazekovich; Exelon; 1,2,5,6</p>	
<p>Patti Metro; FRCC; #2  Linda Campbell ;FRCC ;#2  Steve Wallace; Seminole Electric Coop ;#4  Amy Long; Lakeland Electric; #1  Richard Gilbert; Lakeland Electric; #3  Ron Donahey; Tampa Electric Company; #3  Beth Young; Tampa Electric Company ;#3  Roger Hunnicutt ; Gainesville Reg UtI; #5  Roger Westphal ;City of Gainesville; #3  Greg Woessner ;Kissimmee Utility Auth;#3  Ben Sharma ;Kissimmee Utility Auth;#3  Garry Baker; JEA ;#1</p>	

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Ed DeVarona; Florida Power & Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMPA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3	
William Smith; Allegheny Power; #1	
Mark Fidrych; WAPA; #1	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
R. Peter Mackin; TRANC; #1	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
John Swanson;NPDD;2 Darrick Moe;WAPA;2 Lloyd Linke;WAPA;2	

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Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trencce; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	
Ed Riley; CA-ISO; #2	
John Horakh; MAAC; #2	
Ed Davis; Entergy Services; #1	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
Ken Githens; Allegheny Energy ; #5	
<b>'No' Responses</b>	
Khaqan Khan; IMO; #2	It is recommended that the standards should be supported by appropriate technical documentation that is allowed under the standards process to ensure a complete understanding of the standard and its consistent applications.
The SDT agrees with this concept. Supporting documents may be developed at any time, and are not part of the technical content that is balloted with the standard, nor are they used for determining compliance.	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	This should be covered in the coordinate operations standard (#100).
Agreed. This requirement seems to be adequately addressed by the Coordinate Operations Standard.	

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<b>and has been dropped from this standard.</b>	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2 Anita Lee; AESO; #2 Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2	The wording should be clarified to only include those facilities that are subject to IROLs.
<b>This requirement seems to be adequately addressed by the Coordinate Operations Standard, and has been dropped from this standard. Requirement 201 The Coordinate Operations Standard requires RAs to have a process, procedure or plan to address situations that require coordination of actions involving more than one RA.</b>	



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**7. Identify ‘current’ value of IROLs as replacement for ‘list’ of IROLs**

Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLs, the RA must be able to identify the ‘current value’ of its IROLs. Do you agree with this change?

**Consideration of Comments:** While most industry commenters agreed with this change, this requirement has been transferred to the Determine Facility Ratings (DFR) Standard. As shown below, the DFR Standard achieves the same objective by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is then required to provide the limits according to the schedule.

(Determine Facility Ratings Standard 604, Requirement 4) The Reliability Authority, Planning Authority and Transmission Planner shall each provide its System Operating Limits (and Interconnection Reliability Operating Limits) to those entities that have a reliability-related need for those limits and provide a written request that includes a schedule for delivery of those limits as follows:

‘Yes’ Responses	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	<p>It is not clear how section 201 coordinates with Standard 600 (Determining limits) The requirement that IROLs should be current(reflect current system conditions, i.e. topology, loading, generation, etc.) is not mentioned under Requirements, it is only stated in item 3 of the measures.</p> <p>The difference between Measures (2) and (3) is not clear; they seem to be saying the same thing.</p> <p>The written structure of 201 might be improved by having a one-to-one correspondence between Requirements and measures. Measure (1)(i) does not recognize that changes in topography in an adjacent RA area may impact the current IROL values.</p>
<p>This requirement has been transferred to the DFR Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p>	
James Murphy; BPAT;#1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	<p>It should be made clearer that the IROL facilities can be dynamic also. Some read this as only dynamic IROL values. Implementation plan will also need to change to reflect this update.</p>
<p>This requirement has been transferred to the DFR Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p>	

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<p>Peter Burke; ATC; #1</p>	<p>Although the yes box has been check it does not mean that we support all of the revised changes. The question says the SDT modified the requirement “so that instead of requiring a ‘list’ of IROL’s,...” but, in the measures, you require a list so a list is required. Our concern is not mainly of the list but the idea of how often the list needs to be updated. Since an IROL is a subset of SOL’s, would it not be more efficient if the RA could identify those SOL’s that are IROLs and show that they are monitoring them?</p> <p>Measures #3</p> <p>How does the SDT think that this measure can be demonstrated? In our opinion this may only be able to be demonstrated in front of the Compliance Monitor personally.</p>
<p>This requirement has been transferred to the DFR Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p>	
<p>Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2 Steve Wallace; Seminole Electric Coop ;#4 Amy Long; Lakeland Electric; #1 Richard Gilbert; Lakeland Electric; #3 Ron Donahey; Tampa Electric Company; #3 Beth Young; Tampa Electric Company ;#3 Roger Hunnicutt ; Gainesville Reg Utl; #5 Roger Westphal ;City of Gainesville; #3 Greg Woessner ;Kissimmee Utility Auth;#3 Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1 Ed DeVarona; Florida Power &amp; Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMPA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3</p>	<p>It appears that this change is reflected in Measure (2) and Noncompliance level (4)(i). There should be a similar change made to the requirements section of 201.</p>
<p>This requirement has been transferred to the DFR Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p>	
<p>Khaqan Khan; IMO; #2</p>	<p>While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. Also refer to comments given in question 13.</p>
<p>This requirement has been transferred to the DFR Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The</p>	

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<p>developer of those limits is required to provide the limits according to the schedule.</p>	
<p>Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3</p>	<p>There is no verbiage in the Requirements section to indicate this change, similar to the changes made in Measure (2) and Non-Compliance level 4(i).</p>
<p>This requirement has been transferred to the DFR Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>There is reference in this section indicating “which facilities are subject to,” “shall have a list,” “evidence that the list was updated,” etc.</p> <p>It is ISO-NE’s position that Standard 200 should clearly reflect the fact that IROL’s can be dynamic in nature. While it may be possible that every possible configuration can be identified in advance to deal with this dynamic, the reality is that this list would be extremely large and difficult to maintain. To improve on the situation, this section should require that the RA operators have a base set of limits that include N-1 configurations, along with identifying the following:</p> <p>The boundary conditions for which the published limits are applicable;</p> <p>The critical contingency that drive the applicable limit; and</p> <p>An understanding of what the associated limit is designed to protect the system against (i.e. transient stability, voltage decline, etc.)</p> <p>The System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.</p>
<p>The standard doesn’t dictate how many IROLs any RA may have. The industry has agreed that RAs need to identify facilities subject to IROLs, in advance, so that system operators have the situational awareness needed to be responsive to system changes most likely to affect those facilities.</p> <p>The standard does not place a limit on how many or how few IROLs there may be in a Region – but no matter how many IROLS there are, they all need to be identified and monitored. This standard does require that the IROLS be identified so they can be used by system operators, but the standard does not require that the IROLS be identified on a ‘list’.</p> <p>This requirement has been transferred to the DFR Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule. Note that the DFR Standard does indicate that the methodology for developing SOLs (and for identifying the subset of SOLs that are also IROLS) include identification of the three elements you’ve indicated – boundary conditions critical contingency, and purpose.</p>	
<p>Greg Campoli; NYISO; #2 James Castle; NYISO ;#2</p>	<p>While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they</p>

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<p>John Ravalli; NYISO; #2          Karl Tammar; NYISO; #2          Robert Waldele; NYISO; #2          Michael Calimano; NYISO; #2</p>	<p>occur. In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.</p>
<p>This requirement has been transferred to the Determine Facility Ratings Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p> <p>As documented in the recent NERC Operating Committee Operating Limit Definition Task Force Survey, there are many different systems employed for identifying IROLS. The Determine Facility Ratings Standard does not require all RAs to follow the same SOL (and IROL) development process – but does require that each SOL development methodology meet a minimum set of criteria; therefore the standard will not provide guidance to operators on identifying IROLS as they occur. This is considered company-specific training.</p> <p>The scopes of the SAR associated with this standard (and the Determine Facility Ratings Standard) do not address tools or training. Having plans in place to address emergencies is expected to be addressed in other standards. This standard is focused on operating within IROLS – and does require that there be plans in place to both prevent and mitigate instances of exceeding IROLS – these plans are intended to provide system operators with the information needed to make appropriate responses to IROL-related scenarios.</p>	
<p>Ralph Rufrano; NYPA; #1          David Kiguel; Hydro One Networks Inc.; #1          Roger Champagne; H-Q TransÉnergie; #1          Greg Campoli; New York ISO (NYISO); #2          Peter Lebro; National Grid; #1          Kathleen Goodman; ISO-NE; #2          Dan Stosick; ISO-NE; #2          Al Adamson; NYSRC; #2          Khagan Khan; The IMO Ontario; #2          Brian Hogue; NPCC; #2          Guy Zito; NPCC; #2          Lawrence Hochberg; NYSRC; #2</p>	<p>While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. Also refer to comments given in question 13.</p> <p>In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.</p>
<p>This requirement has been transferred to the Determine Facility Ratings Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p> <p>As documented in the recent NERC Operating Committee Operating Limit Definition Task Force Survey, there are many different systems employed for identifying IROLS. Determine Facility Ratings Standard does not require all RAs to follow the same SOL (and IROL) development process – but does require that each SOL development methodology meet a minimum set of criteria; therefore the standard will not provide guidance to operators on identifying IROLS as they occur. This is considered company-specific training.</p> <p>See response to question 13.</p> <p>The scopes of the SAR associated with this standard (and the Determine Facility Ratings Standard) do not address tools or training. Having plans in place to address emergencies is expected to be addressed in other standards. This standard is focused on operating within IROLS – and does require that there be plans in place to both prevent and mitigate instances of exceeding IROLS – these plans are intended to provide system operators with the information needed to make appropriate responses to</p>	

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<b>IROL-related scenarios.</b>	
<p>Carter Edge; SEPA ; #4 &amp; 5                  William Gaither; SC Public Svc Auth; #1                  Ken Skroback; AL Elec Coop ; #1                  Roger Brand; Muni Elec Auth of GA; #1                  Phil Creech; Progress Energy - Carolinas; #1                  Gene Delk; SCE&amp;G; #1                  Al McMeekin; SCE&amp;G; #1                  Randy Hunt; Dominion – VA Pwr; #1                  Doug Newbauer; GA System Ops; #1                  Mike Clements; TVA; #1                  Don Reichenbach; Duke Energy; #1                  Lynna Estep; SERC; #2                  Dan Kay; S Mississippi Elec Pwr Assoc; #1                  Matt Ansley; Southern Company; #1                  Uma Gangadharan; Entergy; #1</p>	<p>It would be beneficial to stress that updating the list of facilities should be done continuously to reflect real-time conditions.</p>
<p>This requirement has been transferred to the Determine Facility Ratings Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p> <p>The requirement to specifically identify the facilities subject to IROLs has been dropped from the standard.</p>	
<p>Lee Xanthakos; SCE&amp;G; #1</p>	<p>I agree with this, but that was not the way I understood it when I read the standard. The “current value” to me means what this value is right now. I recommend the word “current” be changes to something like “set”</p>
<p>Current was intended to mean the value that is effective ‘now’ in ‘real-time’. This requirement has been transferred to the Determine Facility Ratings Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p>	
<p>Karl Kohlrus; City Water, Light &amp; Power; # 5</p>	
<p>William Pope; Gulf Power Co; #3</p>	
<p>Michael Zahorik; ATC; #1</p>	
<p>Raj Rana; AEP; 1,3,5,6</p>	
<p>Dale McMaster; AESO; #2                  Ed Riley; CAISO; #2                  Sam Jones; ERCOT; #2                  Don Tench ; IMO; #2                  Dave LaPlante; ISO_NE; #2                  William Phillips; MISO; #2                  Karl Tammar; NYISO; #2                  Bruce Balmat; PJM; #2                  Carl Monroe; SPP ; #2</p>	
<p>William Smith; Allegheny Power; #1</p>	
<p>Mark Fidrych; WAPA; #1</p>	

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Anita Lee; AESO; #2	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
R. Peter Mackin; TRANC; #1	
John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2	

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Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trencce; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
Richard Kafka; Pepco; #3	
Ken Githens; Allegheny Energy ; #5	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
John Horakh; MAAC; #2	
Ed Riley; CA-ISO; #2	
<b>'No' Responses</b>	
Ed Davis; Entergy Services; #1	There have been several changes to the Requirements and Measures of 201 and we are unsure to which change this question refers. Therefore, we can not agree with the change at this time.
It would have been helpful if you could have provided guidance on whether the requirement and its measures, as changed, is acceptable.	
<b>Other Comments:</b>	
John Blazekovich; Exelon; 1,2,5,6	Although we agree with the need to monitor the condition of the bulk power electric system, and can reasonably expect that IROL type scenarios and conditions can be studied in the "planning mode", we have concerns that this Standard may be impossible to comply with on a "real time basis". It appears that compliance with this standard will require executing literally hundreds, perhaps thousands of scenarios, it is unlikely one can identify IROLs ahead of time. Especially since each day presents a different system, both from generation pattern perspective and

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	from transmission topology perspective.
<p>The definition of IROL was changed to conform to the definition provided in the recently approved Compliance Templates, updated to use the same language as the Functional Model.</p> <p>This requirement has been transferred to the Determine Facility Ratings Standard. In that standard, the same objective is achieved by requiring that end-users provide a schedule for delivery of the limits it needs. The developer of those limits is required to provide the limits according to the schedule.</p> <p>If the RA can't update IROLs to reflect real-time conditions, then the RA needs to have conservative operating limits that already include certain system outages or reconfigurations. Note that the Determine Facility Ratings standard includes a set of criteria that must be addressed in establishing SOLs and in identifying the subset of SOLs that are also IROLs. This should help minimize the number of scenarios that must be addressed in establishing operating limits.</p>	



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**8. Do you agree with the compliance monitoring process?**

**Summary Consideration:** While most industry commenters agreed with the revised compliance monitoring process, the associated requirement has been absorbed into the Determine Facility Ratings Standard, and this question is no longer relevant. The SDT did not attempt to answer the responses to this question.

Yes Responses	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	There should be some consistency across all the standards for time frames of “requested data”. Without it, the Compliance Monitor can not receive the necessary data for a month and the reporting entity can still be compliant.
Gerald Rheault; Manitoba Hydro; #1,3,5,6	The requirements in item 3 of this section should be expanded to include evidence of agreed procedures to identify IROLs for facilities shared by RAs and to ensure that IROLs reflect current system conditions.
Greg Campoli; NYISO; #2 James Castle; NYISO; #2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2	The requirements need to be clear as to what exactly is needed. For example, what constitutes evidence that a list was updated from an auditing perspective?
Karl Kohlrus; City Water, Light & Power; # 5	
John Blazekovich; Exelon; 1,2,5,6	
William Pope; Gulf Power Co; #3	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	
Michael Zahorik; ATC; #1	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2	

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William Smith; Allegheny Power; #1	
Peter Burke; ATC; #1	
Anita Lee; AESO; #2	
Mark Fidrych; WAPA; #1	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
R. Peter Mackin; TRANC; #1	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1	

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David Majors; Georgia Power Company; #3	
Khaqan Khan; IMO; #2	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trencce; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
John Horakh; MAAC; #2	
Richard Kafka; Pepco; #3	
Ken Githens; Allegheny Energy ; #5	
Ed Davis; Entergy Services; #1	
Ed Riley; CA-ISO; #2	
<b>'No' Responses</b>	

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<p>Dan Boezio; AEP; #1          Ron Ciesiel; SPP; #2          Bob Cochran; SPS; #1          Mike Gammon; KCP&amp;L; #1          Allen Klassen; Westar; #1          Peter Kuebeck; OG&amp;E; #1          Mike Stafford; GRDA; #1          Robert Rhodes; SPP; #2          Scott Moore; AEP; #1</p>	<p>We would suggest that the phrase in 201(d)(1) referring to on-site reviews every three years be replaced with on-site reviews as needed.</p>
<p>Raj Rana; AEP; 1,3,5,6</p>	<p>The phrase in 201(d)(1) referring to on-site reviews every three years be replaced with on-site reviews as needed. No reason for the standard to lock into either a 3-year cycle or should leave room for the industry to change the frequency, by a shorter cycle.</p>
<p>Patti Metro; FRCC; #2          Linda Campbell ;FRCC ;#2          Steve Wallace; Seminole Electric Coop ;#4          Amy Long; Lakeland Electric; #1          Richard Gilbert; Lakeland Electric; #3          Ron Donahey; Tampa Electric Company; #3          Beth Young; Tampa Electric Company ;#3          Roger Hunnicutt ; Gainesville Reg Utl; #5          Roger Westphal ;City of Gainesville; #3          Greg Woessner ;Kissimmee Utility Auth;#3          Ben Sharma ;Kissimmee Utility Auth;#3          Garry Baker; JEA ;#1          Ed DeVarona; Florida Power &amp; Light Co. ;#1          Preston Pierce; Progress Energy Florida ;#1          Bob Remley; Clay Electric Cooperative; #4          Joe Krupar; FMPA; #3          Paul Elwing; Lakeland Electric; #5          Joe Roos; Ocala Electric Utility ;#3</p>	<p>(3) indicates that the Reliability Authority must provide certain information upon request of the Compliance Monitor, but does not indicate how long the Reliability Authority has to provide the information. A possible revision could be that “ upon request the Reliability Authority will provide the following information to the Compliance Monitor within 5 business days”.</p>
<p>Peter Burke; ATC; #1</p>	<p>(2) Is difficult to understand, confusing. Would the SDT please provide greater clarification?          (3) i. It is our opinion that this should be a level 4 not level 3. This is a situation were an RA has blatantly ignored this standard and put the Interconnection at risk.          (3) ii. Suggestion would be to remove “updated” and replace it with “being reviewed.”          (4) ii. This should be changed to something where there is no evidence that the RA is actively reviewing its SOL to determine whether it should be classified as an IROL. It seems possible that an RA at a given</p>

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	<p>audit time my not have any IROL and, because of that, no list exists which shows any IROL, thus mandating a Level 4 Noncompliance. In Question 7 you stated that a list was not required in requirements.</p>
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>What constitutes “evidence that the list was updated”? For compliance monitoring, all requirements need to be clear as to what exactly is needed.</p>
<p>Ralph Rufrano; NYPA; #1  David Kiguel; Hydro One Networks Inc.; #1  Roger Champagne; H-Q TransÉnergie; #1  Greg Campoli; New York ISO (NYISO); #2  Peter Lebro; National Grid; #1  Kathleen Goodman; ISO-NE; #2  Dan Stosick; ISO-NE;#2  Al Adamson; NYSRC;#2  Khagan Khan; The IMO Ontario; #2  Brian Hogue; NPCC;#2  Guy Zito; NPCC;#2  Lawrence Hochberg; NYSRC; #2</p>	<p>NPCC participating members of CP9 (NYSRC) doesn’t agree with having a list of facilities  Also, what constitutes evidence that a list was updated from an auditing perspective? The requirements need to be clear as to what exactly is needed.</p>

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**9. Do you agree with the levels of non-compliance?**

**Summary Consideration:** While most industry commenter agreed with the revised levels of non-compliance, the associated requirement has been absorbed into the Determine Facility Ratings Standard and this question is no longer relevant. The SDT did not attempt to answer the responses to this question.

'Yes' Responses	
Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2 Steve Wallace; Seminole Electric Coop ;#4 Amy Long; Lakeland Electric; #1 Richard Gilbert; Lakeland Electric; #3 Ron Donahey; Tampa Electric Company; #3 Beth Young; Tampa Electric Company ;#3 Roger Hunnicutt ; Gainesville Reg Utl; #5 Roger Westphal ;City of Gainesville; #3 Greg Woessner ;Kissimmee Utility Auth;#3 Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1 Ed DeVarona; Florida Power & Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMPA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3	Level 3 non-compliance indicates that the list must be updated as with the measurements some type of time period should be included.
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	There should be some consistency across all the standards for time frames of "reviewing or updating". Without it, an entity can only review its documents and programs "at will" and still be compliant.
Ed Riley; CA-ISO; #2	The CAISO supports financial penalties for non-compliance and recognizes that these penalties should be greater than any potential economic advantage to violating a standard.
John Blazekovich; Exelon; 1,2,5,6	
William Pope; Gulf Power Co; #3	
Raj Rana; AEP; 1,3,5,6	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
James Murphy; BPAT;#1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1	

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Marv Landauer; BPAT; #1	
Michael Zahorik; ATC; #1	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
Anita Lee; AESO; #2	
Greg Campoli; NYISO; #2 James Castle; NYISO; #2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2	
William Smith; Allegheny Power; #1	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1	

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Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
R. Peter Mackin; TRANC; #1	
Khaqan Khan; IMO; #2	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
John Horakh; MAAC; #2	
Ed Davis; Entergy Services; #1	
Ken Githens; Allegheny Energy ; #5	
Richard Kafka; Pepco; #3	
<b>'No' Responses</b>	
Karl Kohlrus; City Water, Light & Power; # 5	Some of the more serious violations seemed to have the lesser penalties and vice versa
Mark Fidrych; WAPA; #1	The analyses and assess. require once/dy. In some circumstances, where system conditions do not change and the IROL has ample operating room, the requirements do not acknowledge that mode explicitly.
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	I agree with the levels for actual operating events, but don't agree with the concept that a newfound definition of an IROL would result in a level 4 under "IROL Identification." In fact, for first time offenses under the heading of "IROL Identification," there should be no monetary fines. My concern is based on disagreement with the definition proposed here.  I also disagree with the levels and associated fines under "Analyses and Assessments" since it implies that for one miss of a successful state estimator/contingency analysis run there could be a fine. I want NERC to issue minimum standards for the real-time analysis function that should specify a mean time between failures or to define a maximum allowable downtime for the operation. This is discussed in the US/Canada Task Force Recommendations under number 22. Requiring a



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	maximum 30-minute failure, as this standard appears to do, is getting ahead of ourselves in establishing requirements.
John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trence; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	There are inconsistencies, for instance IROL Identification –no list of facilities subject to IROLs is level 4; Monitoring- List of facilities subject to IROLs not available for Real-time use is level 2.
Kathleen Goodman; ISO-NE; #2	What constitutes “evidence that the list was updated”? For compliance monitoring, all requirements need to be clear as to what exactly is needed.
Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE; #2 Al Adamson; NYSRC; #2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC; #2 Guy Zito; NPCC; #2 Lawrence Hochberg; NYSRC; #2	What constitutes evidence that a list was updated from an auditing perspective?
<b>Other Responses</b>	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2	There was no group consensus – financial penalties are an issue for some groups.

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Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2	
Removing financial penalties are outside the scope of the SDT.	

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**10. Agreement on Facilities subject to IROLs**

Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

**Summary Consideration:** While most industry commenters agreed that this is necessary, some commenters indicated this should be addressed by the Coordinate Operations Standard.

The Coordinate Operations Standard does require RAs to have a process, procedure or plan for activities that require coordination of actions involving more than one RA and this should include agreeing on which Facilities in the combined RA Areas are subject to IROLs.

(Coordinate Operations Standard 101, Requirement 1) The Reliability Authority shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other Reliability Authorities to support interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other Reliability Authority Areas as well as those developed in coordination with other Reliability Authorities.

Several commenters also suggested that this standard should include the language in Policy 9 which states that if two RAs (RCs in current Policy) can't agree on a limit, they should both operate to the most limiting parameter. This change is within the scope of the SAR and has been included in the revised standard.

Yes Responses	
Ed Riley; CA-ISO; #2	We feel that using a common number for a limit at a boundary or "joint facility" is basic to the reliability of the system. Having a path operated to two different numbers leads to one side potentially scheduling more than the other side can accommodate and can result in "real-time" disagreements and curtailments that should have been handled in the day-ahead scheduling process.
The requirement to coordinate the setting of limits at a boundary is covered in the first requirement of the Coordinate Operations Standard, and was removed from this standard.	
Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE; #2 Al Adamson; NYSRC; #2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC; #2 Guy Zito; NPCC; #2	There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in standard 600.

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<p>Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2</p>	
<p>The Determine Facility Ratings Standard does require the RA to share its SOL development methodology and the process used to identify the subset of IROLs with other RAs, and does require that RAs be responsive to comments received on the methodology used to develop IROLs.</p> <p>Coordination between RAs is addressed in the Coordinate Operations Standard. Several commenters indicated that this requirement is already covered in the Coordinate Operations Standard's first requirement, which requires RAs to have a process, procedure or plan to address situations involving more than one RA. Under the Coordinate Operations Standard, the procedure, process or plan does not need to be a formal agreement.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>We do have a concern about having a formal process. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit.</p>
<p>Several commenters indicated that this requirement is already covered in the Coordinate Operations Standard's first requirement, which requires RAs to have a process, procedure or plan to address situations involving more than one RA. Under the Coordinate Operations Standard, the procedure, process or plan does not need to be a formal agreement and could work as you've described.</p> <p>Language has been added to the standard to indicate that if there is a difference of opinion on which value of an IROL to use in real-time operations, the RAs must have agreed in advance to operate to the more conservative limit.</p>	
<p>Khaqan Khan; IMO; #2</p>	<p>We agree that there should be a mutual agreement on coordination among RAs. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impactive facilities. Such requirements can be included in standard 600.</p>
<p>The Determine Facility Ratings Standard (Standard 600) does require the RA to share its SOL development methodology and the process used to identify the subset of IROLs with other RAs, and does require that RAs be responsive to comments received on the methodology used to develop IROLs.</p> <p>Standard 600 does require that the methodology used to develop SOLs and the process used to identify the subset of SOLs that are also IROLs meet a set of criteria.</p>	
<p>Lee Xanthakos; SCE&amp;G; #1</p>	<p>I recommend that the drafting team adds a clause directing the RAs to use the process that results in the lower value for the limit if agreement can not be reached. They should keep using that limit until agreement is reached. They should push for agreement.</p>
<p>Language has been added to the standard to indicate that if there is a difference of opinion on which value of an IROL to use in real-time operations, the RAs must have agreed in advance to operate to the more conservative limit.</p>	
<p>Karl Kohlrus; City Water, Light &amp; Power; # 5</p>	
<p>Mark Fidrych; WAPA; #1</p>	

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Anita Lee; AESO; #2	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
William Smith; Allegheny Power; #1	
John Blazekovich; Exelon; 1,2,5,6	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2	
Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2 Steve Wallace; Seminole Electric Coop ;#4 Amy Long; Lakeland Electric; #1 Richard Gilbert; Lakeland Electric; #3 Ron Donahey; Tampa Electric Company; #3 Beth Young; Tampa Electric Company ;#3 Roger Hunnicutt ; Gainesville Reg Utl; #5 Roger Westphal ;City of Gainesville; #3 Greg Woessner ;Kissimmee Utility Auth;#3 Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1 Ed DeVarona; Florida Power & Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMPA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1	

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Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
R. Peter Mackin; TRANC; #1	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	
John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trence; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPP COR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
Ed Davis; Entergy Services; #1	
John Horakh; MAAC; #2	
Richard Kafka; Pepco; #3	
Ken Githens; Allegheny Energy ; #5	
<b>'No' Responses</b>	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1	This should be incorporated in the Coordinate Operations standard and doesn't need to be repeated here.

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<p>Robert Rhodes; SPP; #2 Scott Moore; AEP; #1</p>	
<p>Agreed. Several commenters made the same suggestion, and this requirement was removed from this standard.</p>	
<p>James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1</p>	<p>This should be covered in the coordinate operations standard (#100).</p>
<p>Agreed. Several commenters made the same suggestion, and this requirement was removed from this standard.</p>	
<p>Gerald Rheault; Manitoba Hydro; #1,3,5,6</p>	<p>There should be a requirement that the RA obtain agreement from its adjacent RAs on which facilities in the combined RA Areas are subject to IROLs, however the Standard to address this requirement should be Standard 100 "Coordinate Operations" and not this Standard.</p>
<p>Agreed. Several commenters made the same suggestion, and this requirement was removed from this standard.</p>	
<p>Peter Burke; ATC; #1</p>	<p>We are not convinced that a formal agreement has to be in place for adjacent RAs to determine if a facility should be subject to an IROL but there should be a mutually agreed upon process / procedure to identify and honor those facilities identified.</p>
<p>Agreed. Several commenters indicated that this requirement is already covered in the Coordinate Operations Standard's first requirement, which requires RAs to have a process, procedure or plan to address situations involving more than one RA. Under the Coordinate Operations Standard, the procedure, process or plan does not need to be a formal agreement.</p>	
<p>Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3 Roman Carter; SCGEM; #5, 6</p>	<p>The Standard already states that RAs that share a facility, having an IROL, will agree to a 'process' for determining if it qualifies and what the value should be. Being more prescriptive doesn't add anything here.</p>

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<p>Joel Dison; SCGEM; #5, 6          Tony Reed; SCGEM; #5, 6          Lloyd Barnes; SCGEM; #5, 6          Clifford Shepard; SCGEM; #5, 6          Lucius Burris; SCGEM; #5, 6          Roger Green; SCGEM; #5, 6</p>	
<p>The commenters who supported this addition wanted there to be something formal in place so that the RA could review the IROLs of its adjacent RAs – the intent was to ensure that there was peer review to help prevent one RA from developing its IROLs in a manner that would adversely impact its adjacent RAs.</p>	
<p>Al Corbet; TVA          Jerry Landers; TVA          Jennifer Weber; TVA          Edd Forsythe; TVA          Larry Goins; TVA          Mark Creech; TVA          Kathy Davis; TVA</p>	<p>RAs should coordinate and reach agreements for IROLs on joint Facilities. RAs should communicate IROLs that could impact neighboring RAs.</p>
<p>Agreed. However, both of these actions are addressed in the Coordinate Operations Standard. Standard 101 requires the RA to have a process, procedure or plan to address situations involving more than one RA – and Standard 102 requires the RA to notify other RAs of situations in its RA Area that may impact other RA Areas.</p>	
<p>Michael Zahorik; ATC; #1</p>	<p>Each RA should agree with the calling RA on the IRL.</p>
<p>If two RAs can't agree on an IROL, the standard now requires that the RAs operate to the most conservative limit.</p>	
<p>Raj Rana; AEP; 1,3,5,6</p>	<p>I suggest this standard adopt the concept included in the newly revised Policy 9, which requires the RCs to respect each others limits and operate to the most conservative position when disagreements arise.</p>
<p>This concept has been adopted and is reflected in the revised standard.</p>	
<p>William Pope; Gulf Power Co; #3</p>	
<p><b>Other Responses</b></p>	
<p>Lawrence Hochberg; NYSRC; #2</p>	<p>There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in Standard 600.</p>
<p>The Determine Facility Ratings Standard does require the RA to share its SOL development methodology and the process used to identify the subset of IROLs with other RAs, and does require that RAs be responsive to comments received on the methodology used to develop IROLs.          Coordination between RAs is addressed in the Coordinate Operations Standard. Several commenters indicated that this requirement is already covered in the Coordinate Operations Standard's first</p>	



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requirement, which requires RAs to have a process, procedure or plan to address situations involving more than one RA. Under the Coordinate Operations Standard, the procedure, process or plan does not need to be a formal agreement.

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**11. Public posting of IROLs**

Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

**Summary Consideration:** Most industry commenters did not support the public posting of IROLs, so this change was not incorporated into the revised standard.

Yes Responses	
John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trence; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	This would help all entities confirm that the correct value is being used. However, confirm that public posting means posting on the OASIS in an area that registered market participants can access. For national security reasons, these values should not be posted on a web site that any Internet user can access.
Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose.	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	Certain limit information can be beneficial to the Wholesale Market. By including appropriate levels of viewing restrictions, passwords, and security screens, etc., it could be posted without harm to physical security
Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose.	
'No' Responses	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1	If "posting" means naming the specific limiting elements then we think critical information such as this does nothing to improve reliability and may be to the detriment of Homeland Security. If this is only a 'numeric value' then perhaps this can be accommodated.

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<p>Monroe Landrum; Southern Company Svcs; #1  Gwen Frazier; Southern Company Svcs; #1  Steve Williamson; Southern Company Svcs; #1  Rod Hardiman; Southern Company Svcs; #1  Jonathan Glidewell; Southern Company Svcs; 1  Dan Richards; Southern Company Svcs; #1  Mike Hardy; Southern Company Svcs; #1  David Majors; Georgia Power Company; #3</p>	
<p>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</p>	
<p>Raj Rana; AEP; 1,3,5,6</p>	<p>This is a bad idea with what should be obvious infrastructure security risks associated with it. However, the business community may want to see these limits posted. There should be a mechanism for the commercial community to view such limits while observing the infrastructure security requirements.</p>
<p>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</p>	
<p>John Blazekovich; Exelon; 1,2,5,6</p>	<p>– We suspect the public postings of IROL's would be a dream come true for any terrorist considering an attack against the bulk power infrastructure of the United States and Canada.</p>
<p>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</p>	
<p>Al Corbet; TVA  Jerry Landers; TVA  Jennifer Weber; TVA  Edd Forsythe; TVA  Larry Goins; TVA  Mark Creech; TVA  Kathy Davis; TVA</p>	<p>We see no value in posting this and it may pose a security risk.</p>
<p>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</p>	
<p>Patti Metro; FRCC; #2  Linda Campbell ;FRCC ;#2  Steve Wallace; Seminole Electric Coop ;#4  Amy Long; Lakeland Electric; #1  Richard Gilbert; Lakeland Electric; #3  Ron Donahey; Tampa Electric Company; #3  Beth Young; Tampa Electric Company ;#3  Roger Hunnicutt ; Gainesville Reg Utl; #5  Roger Westphal ;City of Gainesville; #3  Greg Woessner ;Kissimmee Utility Auth;#3</p>	<p>This type of information can be considered secure Critical Infrastructure Information as well as market sensitive and should not be publicly posted.</p>

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Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1 Ed DeVarona; Florida Power & Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMFA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3	
Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose	
Lee Xanthakos; SCE&G; #1	NO. I agree with the SDT that there is no reliability reason to support this.
Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	There should be a requirement to provide information about IROLs to any affected entities particularly Transmission Operator, Balancing Authority and Interchange Authority.
The SAR DT that developed the SAR for Coordinate Operations suggested that there was a need for another SAR to address coordinating operations within an RA's Area.	
Michael Zahorik; ATC; #1	They can not all be determined prior to the fact. They will change. A cascade event generally requires multi elements which will increase the possibilities in a factorial fashion.
Agreed. The standard has been modified to try to add even more clarity to this concept.	
Peter Burke; ATC; #1	The RA should share those IROLs with its members and adjacent RA but public posting may prove to be overly burdensome to the RA's.
The SAR DT that developed the SAR for Coordinate Operations suggested that there was a need for another SAR to address coordinating operations within an RA's Area.	
Anita Lee; AESO; #2	The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.
Please see the response to the ISO/RTO Council's comments.	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	Publicly posting IROLs could introduce market distortion. The information should be shared only with entities responsible for the reliable operation of the electric transmission system. In addition, if the IROL is to be "dynamic", this requirement may not be workable, or, even if workable, could be burdensome.
Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose	
William Smith; Allegheny Power; #1	Identifying the most vulnerable points of the Interconnected transmission system is an invitation to sabotage. System operating limits are appropriate for posting, but that subset of limits that are IROLs should not be identified publicly. This should be confidential information.

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<b>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</b>	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	BPAT believes there is no reliability-related reason to publicly post IROLs; in fact it may be a security issue.
<b>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</b>	
Greg Campoli; NYISO; #2 James Castle; NYISO; #2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2	All RAs should be aware of all IROLs but this information may not be appropriate for the "general public". There is a concern over infrastructure security and issues related to CIPC.
<b>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</b>	
R. Peter Mackin; TRANC; #1	Public posting should not be necessary as long as all entities that have a need to know the IROLs can have access to them.
<b>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</b>	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	This information can be considered secure Critical Infrastructure Information, as well as Market Sensitive, and should not be publicly posted.
<b>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</b>	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	The Transmission Owner is responsible for establishing facility ratings for its equipment. The RA function is to monitor the system according to the TO's System Operating Limits. There is no need to publicly post the IROLs.
<b>Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose</b>	
Ed Riley; CA-ISO; #2	What does "made public" mean? All RAs should be aware of all IROLs but this information may not be appropriate for the "general public". There is a concern over infrastructure security and some concern voiced by a CIPC member.
<b>The term, 'made public' was suggested by several commenters, not by the SDT – and the SDT did not define this term. The SDT assumed that the commenters were suggesting that the limits be posted through OASIS or a similar tool. Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose.</b>	
John Horakh; MAAC; #2	Public posting of IROLs is a market issue, which should be considered in any complementary NAESB

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	standard.
Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose.	
Mark Fidrych; WAPA; #1	
Karl Kohlrus; City Water, Light & Power; # 5	
William Pope; Gulf Power Co; #3	
Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE;#2 Al Adamson; NYSRC;#2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC;#2 Guy Zito; NPCC;#2	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
Kathleen Goodman; ISO-NE; #2	
Khaqan Khan; IMO; #2	
Lawrence Hochberg; NYSRC; #2	
Ed Davis; Entergy Services; #1	
Richard Kafka; Pepco; #3	
Ken Githens; Allegheny Energy ; #5	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1	

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<p>Mike Gammon; KCP&amp;L; #1          Allen Klassen; Westar; #1          Peter Kuebeck; OG&amp;E; #1          Mike Stafford; GRDA; #1          Robert Rhodes; SPP; #2          Scott Moore; AEP; #1</p>	
<b>Other Responses</b>	
<p>Dale McMaster; AESO; #2          Ed Riley; CAISO; #2          Sam Jones; ERCOT; #2          Don Tench ; IMO; #2          Dave LaPlante; ISO_NE; #2          William Phillips; MISO; #2          Karl Tammar; NYISO; #2          Bruce Balmat; PJM; #2          Carl Monroe; SPP ; #2</p>	<p>What does "made public" mean? All RAs should be aware of all IROLs but this information may not be appropriate for the "general public". There is a concern over infrastructure security and some concern voiced by a CIPC member.</p>
<p>The term, 'made public' was suggested by several commenters, not by the SDT – and the SDT did not define this term. The SDT assumed that the commenters were suggesting that the limits be posted through OASIS or a similar tool. Most commenters were opposed to this addition and indicated that posting would not serve a reliability-related purpose.</p>	

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**12. Other comments about Requirement 201:**

**Summary Consideration:** Requirement 201 has been removed from this standard and absorbed into the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard.

Ken Githens; Allegheny Energy; #5	To determine every scenario that would lead to an IROL's ahead of time is a problem.
This requirement has been absorbed into the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (DFR Standard). The DFR Standard includes specific criteria for establishing SOLs and identifying the subset of SOLs that are also IROLs. This should minimize the number of scenarios that must be considered in determining whether an SOL is also an IROL.	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	201(d) & (e) (3) (ii) need to be changed to correspond more with (b) (1) (i). Which includes adding "to reflect changes in its Reliability Authority Area's system topology.
This requirement has been absorbed into the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (DFR Standard). The DFR Standard requires that SOLs (and identification of which SOLs are also IROLs) be developed according to a methodology that meets specific criteria – and one of the criteria is that the limits reflect changes to system topology.	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	<p>1. There needs to be a reference in 201 that the determination of IROLs should be consistent with Standard 600. In Standard 600 it should be explicitly required for the RA to demonstrate it has the tools, procedures and trained staff to do the required studies.</p> <p>The link between an Interconnection Reliability Operating Limit and the limits defined in standard 600 is tenuous – especially as the term "system operating limits" is not capitalized nor is there a reference to standard 600 in the definitions. Without that link, an IROL could be seen as a limit even in steady state (there is no contingency clearly associated with the definition – the consideration of contingencies is buried in standard 603). Presumably the link is believed to be made by calling IROLs a subset of SOL's. While Manitoba Hydro still believes that such limits are not a subset of SOL's but, rather, new limits based on similar studies, but with different criteria for acceptable performance (i.e., limits may be exceeded but cascading, instability and uncontrolled separation are BARELY avoided) there is value in discussing the IROL concept as put forward by the OWL team.</p> <p>2. In standard 600, SOL's are established through consideration of all next single contingencies and for some regions, all multiple contingencies and for others, a set of credible multiple contingencies. Universally, a SOL must be established to avoid cascading, instability and uncontrolled separation. The question for the OWL group to consider is – how</p>



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	<p>does standard 200 deal with the fact that in thermally-limited systems the margin between the SOL and cascading, etc., may be very large, while in stability-limited systems, there will still be some reliability margin, likely not a large one, between the SOL and the onset of cascading, etc. Thus the risk of a problem if an SOL is violated is a function of the nature of the limit itself- the risk associated with stability limits is likely higher than for thermal limits.</p> <p>3. Of the list of nasty events, the risk of instability and uncontrolled separation will be fairly evident from stability studies but the risk of cascading is dependent on thermal ratings, thermal overload and operator action to some extent. Since the SOL definition allows for system readjustments, while requiring limits not be exceeded, the risk of cascading increases if the required adjustments are not undertaken – and these may not be automatic actions. Note that the Standard 600 assumes that qualified ratings will be provided for all facilities (i.e., the rating value will have an associated time period – perhaps 15 minute, 2 hour, etc.) so that facilities ratings are assumed to be respected – there could be an exception in the case of credible multiple contingencies, where a region may tolerate some facility violation if it can be managed expeditiously and not lead to cascading – MAPP presently does this although the ratings being exceeded in the checking process are likely the long term values, not the short term values).</p> <p>Since the Q&amp;A document talks about increased RISK of cascading, rather than occurrence of cascading, the OWL team needs to clarify this potential source of confusion – there will almost always be increased risk of a problem as loadings increase or are left unchanged – but that opens the door to IROL evaluation having to consider the impacts of failures of the operator, etc. As such, any limit in the system could be considered an IROL, since, for some combination of contingencies, the unacceptable consequences could be seen. In fact, you could even consider the definition of an IROL as a steady state limit.</p> <p>4. If the OWL team is adamant that IROLs are a subset of SOL's then the rest of Standard 200 should be reviewed to ensure that risks are properly considered in the measurements and compliance process – right now some entities might be penalized for low risk events.</p> <p>One way to manage the discrepancy would be for</p>
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	<p>IROLs to be established at a known margin from the nasty three events – so the IROL for a thermally-limited system might be significantly higher than the corresponding SOL.</p> <p>5. Until there is more clarity on the definition of an IROL, the implementation plan is suspect when it addresses the current state – there is a good chance IROLs are not being identified and calculated now, as expected by the standard.</p> <p>6. Manitoba Hydro is greatly concerned relative to the statement in the Q&amp;A document regarding special protection schemes since the response to the question indicates that the special protection system should basically be ignored.</p> <p>The reality in MAPP is that such systems are put in place with a high degree of reliability and with the expectation that they will not fail. If Manitoba Hydro had to live with the situation as outlined in the response, we would be in violation every time we export more than, perhaps 500 MW rather than the 2000 MW we can export presently. Is that really what the response was meant to say; or is the response really saying that you should know what the limits are if the special protection is out of service and respect those limits?</p>
<p>1. This requirement has been absorbed into the Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard (DFR Standard). The DFR Standard requires that SOLs (and identification of which SOLs are also IROLs) be developed according to a methodology that meets specific criteria.</p> <p>2. The SDT recognizes that there are different types of IROLs, and that some systems may be more thermally-rated than others. The intent is not to 'equalize' all IROLs across systems, but to ensure that no system operates such that exceeding a limit could cause cascading outages, etc. Each RA has flexibility in setting <math>T_v</math> to an appropriate value for the associated limit. In some Regions, some IORLs have a 20 minute <math>T_v</math>, while other IORLs have a <math>T_v</math> of 30 minutes. This variation in time recognizes that stability-related limits may need a response time that is different from thermally-related limits.</p> <p>3. Each RA and Planning Authority is allowed to design its own SOL development methodology. The individual methodologies are expected to be appropriate for the associated systems. An RA that is responsible for a system that is stability-limited may require additional studies beyond those that are required in the methodology used for a thermally-limited system. There is nothing in Standard 600 to preclude this – Standard 600 was designed to allow this flexibility in SOL development methodologies. All methodologies must, however, result in limits that meet the specified criteria.</p> <p>4. The SDT revised the standard to remove the phrase, "loss of 300 MW ... for 15 minutes." With this change, the measures do not seem to be inappropriate.</p> <p>5. Reliability Coordinators have been field-testing the reporting of IRL violations for several months. Most recently, the OLDTF conducted a survey to determine how each RC is developing its IORLs, and it was clear from the responses that there is no standard methodology, but that each RC does have a methodology for identifying its IORLs.</p> <p>6. This standard neither requires nor precludes the use of an SPS to resolve an IROL within <math>T_v</math>. The reference was intended to say that the system operator needs to know that if the SPS doesn't work, the IROL will be exceeded and the system operator needs to be prepared to take action or to direct others to act without delay.</p>	

**Questions about Requirement 202 — Monitoring**

**13. Provide system operators with additional data on each IROL**

Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
  - (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

**Summary Consideration:** Most industry commenters agreed with this addition. Some commenters questioned the feasibility of providing this information to system operators in 'real-time'. With the transfer of the requirement to identify and communicate IROLs to the Determine Facility Ratings (DFR) Standard, the OWL Standard does not include the above language. The DFR Standard did absorb the requirement to provide supporting information for each IROL – however the DFR Standard does not specifically state that IROLs must be updated in 'real-time'. The DFR Standard requires that entities needing IROLs make a request that includes a schedule for delivery – and requires the RA to deliver the limits according to that schedule.

Standard 604 – Requirement 4 (i) The Reliability Authority shall provide its System Operating Limits (including the subset of System Operating Limits that are Interconnection Reliability Operating Limits) to adjacent Reliability Authorities and Reliability Authorities who indicate a reliability-related need for those limits, and to the Transmission Operators, Transmission Service Providers and Planning Authorities within its Reliability Authority Area. For each Interconnection Reliability Operating Limit, the Reliability Authority shall provide the following supporting information:

- A) Identification and status of the associated Facility (or group of Facilities) that is (are) critical to the derivation of the Interconnection Reliability Operating Limit.
- B) The value of the Interconnected Reliability Operating Limit and its associated  $T_v$ .
- C) The associated contingency(ies).
- D) The type of limitation represented by the Interconnection Reliability Operating Limit (e.g., voltage collapse, angular stability).

<b>'Yes' Responses</b>	
Ken Githens; Allegheny Energy; #5	However, under Requirements 203 or 204 would be a better place to include the addition.
<b>This requirement to provide this information with each IROL has been transferred to the DFR Standard.</b>	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	The wording of (a) could be improved. Suggest: "The system conditions under which exceeding the Interconnection Reliability Operating Limit could lead to instability, uncontrolled separation or cascading outages." As is, the wording of (a) could be interpreted to mean that it is ok to exceed the IROL under other system conditions. Suggest also that stating these items be required in the determination of all System Operating Limits (applicable to Standard 600).

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<p><b>This requirement to provide this information with each IROL has been transferred to the DFR Standard.</b></p>	
<p>Patti Metro; FRCC; #2                  Linda Campbell ;FRCC ;#2                  Steve Wallace; Seminole Electric Coop ;#4                  Amy Long; Lakeland Electric; #1                  Richard Gilbert; Lakeland Electric; #3                  Ron Donahey; Tampa Electric Company; #3                  Beth Young; Tampa Electric Company ;#3                  Roger Hunnicutt ; Gainesville Reg Utl; #5                  Roger Westphal ;City of Gainesville; #3                  Greg Woessner ;Kissimmee Utility Auth;#3                  Ben Sharma ;Kissimmee Utility Auth;#3                  Garry Baker; JEA ;#1                  Ed DeVarona; Florida Power &amp; Light Co. ;#1                  Preston Pierce; Progress Energy Florida ;#1                  Bob Remley; Clay Electric Cooperative; #4                  Joe Krupar; FMPA; #3                  Paul Elwing; Lakeland Electric; #5                  Joe Roos; Ocala Electric Utility ;#3</p>	<p>It is very important for the system operator to have as much information available as possible to make decisions to ensure system reliability.</p>
<p><b>Most commenters agreed with you and the DFR SDT has added this requirement to the DFR standard.</b></p>	
<p>Khaqan Khan; IMO; #2</p>	<p>We agree with these requirements and recommend that these should be specifically included in the standard 200.</p>
<p><b>Most commenters agreed with you and the DFR SDT has added this requirement to the DFR standard.</b></p>	
<p>Greg Campoli; NYISO; #2                  James Castle; NYISO ;#2                  John Ravalli; NYISO; #2                  Karl Tammar; NYISO; #2                  Robert Waldele; NYISO; #2                  Michael Calimano; NYISO; #2                  Ralph Rufrano; NYPA; #1                  David Kiguel; Hydro One Networks Inc.; #1                  Roger Champagne; H-Q TransÉnergie; #1                  Greg Campoli; New York ISO (NYISO); #2                  Peter Lebro; National Grid; #1                  Kathleen Goodman; ISO-NE; #2                  Dan Stosick; ISO-NE;#2                  Al Adamson; NYSRC;#2                  Khagan Khan; The IMO Ontario; #2                  Brian Hogue; NPCC;#2                  Guy Zito; NPCC;#2                  Lawrence Hochberg; NYSRC; #2</p>	<p>This is a desirable addition, and should appear consistently throughout the document</p>

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<p><b>Most commenters agreed with you and the DFR SDT has added this requirement to the DFR standard.</b></p>	
<p>Lee Xanthakos; SCE&amp;G; #1</p>	<p>I agree with providing the system controllers with as much information as possible without overloading them. If the SDT believes that this information aggregated with all the other information System controllers get would not be too much to handle then I'll agree with this requirements.</p>
<p><b>The DFR SDT has added this requirement to the DFR standard. This data does not need to be provided in the form of a 'report' – the data could be provided electronically and available on an 'as requested' basis.</b></p>	
<p>Karl Kohlrus; City Water, Light &amp; Power; # 5</p>	
<p>John Blazekovich; Exelon; 1,2,5,6</p>	
<p>Raj Rana; AEP; 1,3,5,6</p>	
<p>William Pope; Gulf Power Co; #3</p>	
<p>Michael Zahorik; ATC; #1</p>	
<p>Dale McMaster; AESO; #2                  Ed Riley; CAISO; #2                  Sam Jones; ERCOT; #2                  Don Tench ; IMO; #2                  Dave LaPlante; ISO_NE; #2                  William Phillips; MISO; #2                  Karl Tammar; NYISO; #2                  Bruce Balmat; PJM; #2                  Carl Monroe; SPP ; #2</p>	
<p>Anita Lee; AESO; #2</p>	
<p>John Swanson;NPDD;2                  Darrick Moe;WAPA;2                  Lloyd Linke;WAPA;2                  Paul Koskela; MP; 2                  Larry Larson; OTP; 2                  Dick Pursley; GRE; 2                  Martin Trence; XCEL; 2                  Todd Gosnell; OPPD; 2                  Robert Coish; MH; 2                  Joe Knight; MAPPCOR; 2                  Tom Mielnik; MEC; 2                  Dave Jacobson; MH; 2                  Delyn Helm; GRE; 2                  Jason Weiers; OTP; 2                  Dennis Kimm; MEC; 2</p>	
<p>Chifong Thomas; PG&amp;E; #1                  Glenn Rounds; PG&amp;E; #1                  Ben Morris; PG&amp;E; #1</p>	

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William Smith; Allegheny Power; #1	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
Kathleen Goodman; ISO-NE; #2	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
R. Peter Mackin; TRANC; #1	
Jalal Babik; Dominion VA Power; #1	

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Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
Ed Riley; CA-ISO; #2	
John Horakh; MAAC; #2	
Richard Kafka; Pepco; #3	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
Ed Davis; Entergy Services; #1	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
<b>'No' Responses</b>	
Mark Fidrych; WAPA; #1	Under dynamic conditions this is impossible to accomplish
The data does not need to be provided as part of a paper document – this may be provided electronically.	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	We agree if (c ) is omitted. We believe it would be unrealistic to give the system operators the impact of exceeding the limit for every scenario.
This requirement was transferred to the DFR Standard. Additional language was added to clarify (c ).	
<b>Other Comments</b>	
Peter Burke; ATC; #1	We have not indicated a yes or no because the question is confusing. This addition does not appear in the 202 standard that this comment form accompanies. If you are asking if this should be

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	<p>added but has not been currently added to the standard, then ATC's opinion is that this should appear in the standard. The only suggestion is that item "(c)" is not needed. The idea behind moving an SOL into the IROL category is that it has a high potential to cause an adverse impact to the Interconnection.</p>
<p>The SDT wasn't sure if the industry would support this addition, so it was not added to the version of the standard that was posted for comment.</p> <p>In category (c), the entities that currently provide this information to their system operators indicate whether exceeding the IROL will lead to transient stability, voltage decline, etc. The entities currently providing this information to their system operators feel that this information helps the system operator make appropriate decisions.</p>	



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**Questions about Requirement 204 — Actions**

**14. Indicate that directive is related to an IROL**

Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

**Summary Consideration:** Most industry commenters agreed with this addition. Those commenters who disagreed felt that this addition might be interpreted as implying that some RA directives are more important and should be followed more closely than other RA directives. This was not the intent of this requirement.

Yes Responses	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3 Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	This helps to identify the message as to relate to an IROL.
<b>This is what was intended.</b>	
Raj Rana; AEP; 1,3,5,6	Clear and concise communications is always the preference. However, implied in this statement above, is that if the RC issues a directive and does not state it is related to an IROL, then the responsible RA is cleared of all fault, etc. if the RAI delays in following the directive. This is disturbing and part of

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	<p>the reason for some of the language change in the newly revised Policy 5 &amp; 9.</p> <p>From newly revised Policy 5: Complying with Reliability Coordinator directives. The Operating Authority shall comply with Reliability Coordinator directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances the Operating Authority must immediately inform the Reliability Coordinator of the inability to perform the directive so that the Reliability Coordinator can implement alternate remedial actions.</p>
<p>Other standards contain similar requirements for following RA directives.</p> <p>If the RA allows operations within its RA Area to exceed an IROL for time greater than <math>T_v</math>, then that RA is sanctioned. The most severe sanction in this standard is linked to the RA's performance in managing operations without exceeding an IROL for time within <math>T_v</math> - there are no sanctions applied to the RA for not mentioning that a directive is related to an IROL.</p> <p>The suggested language from the newly approved Policy 5 has been adopted and is reflected in the revised standard.</p>	
Michael Zahorik; ATC; #1	This information should be issued to the System Operator when the IRL is issued
<p>Agreed. This is what was intended.</p>	
Lee Xanthakos; SCE&G; #1	
Karl Kohlrus; City Water, Light & Power; # 5	
John Blazekovich; Exelon; 1,2,5,6	
William Pope; Gulf Power Co; #3	
<p>James Murphy; BPAT;#1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1</p>	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
<p>Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2 Steve Wallace; Seminole Electric Coop ;#4 Amy Long; Lakeland Electric; #1 Richard Gilbert; Lakeland Electric; #3 Ron Donahey; Tampa Electric Company; #3 Beth Young; Tampa Electric Company ;#3 Roger Hunnicutt ; Gainesville Reg Utl; #5 Roger Westphal ;City of Gainesville; #3 Greg Woessner ;Kissimmee Utility Auth;#3 Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1</p>	

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Ed DeVarona; Florida Power & Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMPA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3	
Peter Burke; ATC; #1	
Mark Fidrych; WAPA; #1	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
William Smith; Allegheny Power; #1	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
R. Peter Mackin; TRANC; #1	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
Richard Kafka; Pepco; #3	
Ken Githens; Allegheny Energy; #5	
Ed Davis; Entergy Services; #1	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	
John Swanson;NPDD;2 Darrick Moe;WAPA;2 Lloyd Linke;WAPA;2 Paul Koskela; MP; 2	

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<p>Larry Larson; OTP; 2  Dick Pursley; GRE; 2  Martin Trencce; XCEL; 2  Todd Gosnell; OPPD; 2  Robert Coish; MH; 2  Joe Knight; MAPPCOR; 2  Tom Mielnik; MEC; 2  Dave Jacobson; MH; 2  Delyn Helm; GRE; 2  Jason Weiers; OTP; 2  Dennis Kimm; MEC; 2</p>	
<p>Dan Boezio; AEP; #1  Ron Ciesiel; SPP; #2  Bob Cochran; SPS; #1  Mike Gammon; KCP&amp;L; #1  Allen Klassen; Westar; #1  Peter Kuebeck; OG&amp;E; #1  Mike Stafford; GRDA; #1  Robert Rhodes; SPP; #2  Scott Moore; AEP; #1</p>	
<p>John Horakh; MAAC; #2</p>	
<p><b>'No' Responses</b></p>	
<p>Ed Riley; CA-ISO; #2</p>	<p>All directives issued by an RA must be followed without question, no matter what the circumstances. The explanations can be provided after actions have been taken and the problem solved. While we agree that if time permits a reason should be provided, the directive must be followed whether or not a reason is provided.</p>
<p>Agree that it is important that entities respond to all RA directives and that the RA may not always have time to provide a reason for the directive. However, the intent here was to provide the recipient with additional 'situational knowledge.'</p>	
<p>Dale McMaster; AESO; #2  Ed Riley; CAISO; #2  Sam Jones; ERCOT; #2  Don Tench ; IMO; #2  Dave LaPlante; ISO_NE; #2  William Phillips; MISO; #2  Karl Tammar; NYISO; #2  Bruce Balmat; PJM; #2  Carl Monroe; SPP ; #2  Anita Lee; AESO; #2</p>	<p>All directives issued by an RA must be followed without question, no matter what the circumstances. The explanations can be provided after actions have been taken and the problem solved.</p>
<p>Agree that it is important that entities respond to all RA directives and that the RA may not always have</p>	

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time to provide a reason for the directive. However, the intent here was to provide the recipient with additional 'situational knowledge.'	
Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE;#2 Al Adamson; NYSRC;#2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC;#2 Guy Zito; NPCC;#2 Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2	All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standards.
Agree that it is important that entities respond to all RA directives and that the RA may not always have time to provide a reason for the directive. However, the intent here was to provide the recipient with additional 'situational knowledge.'	
Kathleen Goodman; ISO-NE; #2	We agree that the directive should include notice that a potential or actual contingency requires actions to correct the problem. We do not think that the use of the specific term is required.
Most industry commenters supported the requirement that the directive include the phrase, "IROL." This concept was supported by the Blackout Report.	
Lawrence Hochberg; NYSRC; #2	All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standard.
The Coordinate Operations standard addresses RA to RA coordination, and doesn't address coordination of actions within an RA's Area.	
Khaqan Khan; IMO; #2	All directives issued by an Reliability Authority must be followed
Agree that it is important that entities respond to all RA directives and that the RA may not always have time to provide a reason for the directive. However, the intent here was to provide the recipient with additional 'situational knowledge.'	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	

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**15. Measuring duration of an IROL event**

Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

**Summary Consideration:** There was no consensus in response to this question. Some commenters responded to this question by indicating the maximum duration of a telemetry error – others responded to the question by indicating how long before the RA's system were considered to be 'stable'. While there was no consensus, more commenters selected 30 seconds than any other timeframe, so the SDT did not change this in the standard. There were commenters who indicated the duration should have a 'deadband' at the beginning as well as at the end of the duration, and the standard was modified to reflect this suggestion.

Keep minimum of 30 seconds	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	One additional thought is to employ a deadband on both ends of the IROL violation (so that a value must be outside IROL for thirty seconds before it becomes and IROL violation). This would help avoid metering system errors triggering either the beginning or ending of an IROL.
The SDT adopted this concept and it is reflected in the revised standard.	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	We agree with either 30 seconds or 1 minute, but 10 minutes is too long.
Most commenters agreed with keeping the '30 seconds'.	
Lawrence Hochberg; NYSRC; #2	

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John Blazekovich; Exelon; 1,2,5,6	
William Pope; Gulf Power Co; #3	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
Mark Fidrych; WAPA; #1	
William Smith; Allegheny Power; #1	
Peter Burke; ATC; #1	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE; #2 Al Adamson; NYSRC; #2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC; #2 Guy Zito; NPCC; #2	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
R. Peter Mackin; TRANC; #1	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
<b>Change minimum to 1 minute</b>	
John Horakh; MAAC; #2	Changing to 1 minute gives better assurance of good

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	telemetry and allows for the system to settle more.
The intent was simply to exclude telemetry errors, not to ensue that the system had settled. Most commenters indicated a preference for 30 seconds, so this is what was adopted in the standard.	
Richard Kafka; Pepco; #3	One minute is a clearer indication that conditions have settled and that telemetry has kept up with actual conditions.
The intent was simply to exclude telemetry errors, not to ensue that the system had settled. Most commenters indicated a preference for 30 seconds, so this is what was adopted in the standard.	
Lee Xanthakos; SCE&G; #1	I believe the 1 minute limit is reasonable and stays in line with other standards under development.
The SDT working on the Balance Resources and Demand standard has a similar duration, and that SDT has agreed to adopt whatever timing requirement was indicated by the majority of the industry commenters. Most commenters indicated a preference for 30 seconds, so this is what was adopted in the standard.	
Karl Kohlrus; City Water, Light & Power; # 5	
Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #	
Ken Githens; Allegheny Energy; #5	
John Swanson;NPDD;2 Darrick Moe;WAPA;2 Lloyd Linke;WAPA;2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trence; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPP COR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
<b>Change minimum to 10 minutes</b>	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1	Refer to our comment to Question 5. Something on the order of 5-10 minutes may be a better indicator of true system recovery.



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Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
The intent was to exclude telemetry errors, not to provide an indicator of true system recovery. Most commenters indicated a preference for 30 seconds, so this is what was used in the standard.	
Raj Rana; AEP; 1,3,5,6	Something on the order of 5-10 minutes may be a better indicator of true system recovery.
The intent was to exclude telemetry errors, not to provide an indicator of true system recovery. Most commenters indicated a preference for 30 seconds, so this is what was used in the standard.	
Ed Davis; Entergy Services; #1	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skrobback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	
<b>Other Comments</b>	
Ed Riley; CA-ISO; #2	The CAISO would like to see a value remain below its limit for two minutes with the understanding that if the value remains below the limit for two minutes, the reported end of the event or violation occurs at the time the value actually dropped below the limit.
Most commenters indicated a preference for 30 seconds, so this is what was used in the standard. The duration of the event would be measured as you've indicated, except that it would end at the point in time when the value reached the limit – there isn't a requirement to drop below the limit.	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2	The SRC would like to see a value remain below its limit for two minutes with the understanding that if the value remains below the limit for two minutes, the reported end of the event or violation occurs at the time the value actually dropped below the limit.

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<p>Carl Monroe; SPP ; #2 Anita Lee; AESO; #2</p>	
<p>Most commenters indicated a preference for 30 seconds, so this is what was used in the standard. The duration of the event would be measured as you've indicated, except that it would end at the point in time when the value reached the limit – there isn't a requirement to drop below the limit.</p>	
<p>Khaqan Khan; IMO; #2</p>	<p>While the 30 seconds duration may be too short, and 10 minutes be too long, a duration of 2 minutes may be more appropriate.</p>
<p>Most commenters indicated a preference for 30 seconds, so this is what was used in the standard.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>Should be reset immediately when the Limit is cleared and sustained. Should be cleared based on last good telemetry value.</p>
<p>Most commenters indicated a preference for 30 seconds, so this is what was used in the standard. The duration of the event would be measured as you've indicated.</p>	
<p>Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3</p>	<p>Changes here may require looking at the sanctions table and the definition of Tv. Two minutes will ensure the IROL is truly mitigated and not the result of telemetry or integration errors. 5 or 10 minutes may result in exceeding Tv time limits when the IROL has been mitigated.</p>
<p>Most commenters indicated a preference for 30 seconds, so this is what was used in the standard.</p>	
<p>Michael Zahorik; ATC; #1</p>	<p>Time of an event is not important until the violation of over 30 minutes has occurred. An IRL should be addressed ASAP, the solution should also be ASAP, with penalties after the 30 minutes.</p>
<p>Most commenters indicated a preference for 30 seconds, so this is what was used in the standard. The penalties are for exceeding the IROL for time greater than Tv, and some IROLs are expected to have a Tv that is smaller than 30 minutes. WECC, for example has some IORLs that have a Tv of 20 minutes.</p>	

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**16. Sanctions for exceeding an IROL for time greater than T<sub>v</sub>**

Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's T<sub>v</sub> be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

**Summary Consideration:** Most industry commenters are opposed to this sanctions table. Some of the commenters that opposed this table indicated that the last row of the table doesn't include a sanction for a maximum value greater than 30% and suggested the last stage should be set at equal to or greater than 25% and this change was implemented. Most of the commenters who oppose the table are opposed to all financial sanctions, and removing the sanctions is outside the scope of the SDT.

<b>'Yes' Responses</b>	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	Manitoba Hydro agrees with the sanctions listed in the table below; however we believe the multiplications factors should continue to increase for event durations beyond 15 minutes. For example, the sanction for an event duration of one hour should be more severe than for an event duration of 15 minutes and so on.
Agreed. There were several commenters who made the same suggestion, and this has been adopted in the revised standard.	
John Horakh; MAAC; #2	The table can be simplified by making four columns for the four "event duration exceeds its T <sub>v</sub> " segments, instead of repeating them six times. The table will then form a six by four grid with the multiplication factors filling the grid.
This will be a simplification and we will adopt your suggestion.	
Karl Kohlrus; City Water, Light & Power; # 5	
John Blazekovich; Exelon; 1,2,5,6	
William Pope; Gulf Power Co; #3	
Michael Zahorik; ATC; #1	
Peter Burke; ATC; #1	
William Smith; Allegheny Power; #1	
R. Peter Mackin; TRANC; #1	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
Marc Butts; Southern Company Svcs; #1	

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Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
Ed Riley; CA-ISO; #2	
Richard Kafka; Pepco; #3	
<b>'No' Responses</b>	
Ken Githens; Allegheny Energy; #5	Remove ≤ 30% from the last block.
Agreed. The table has been revised to reflect your suggestion.	
Raj Rana; AEP; 1,3,5,6	There are no sanctions listed for a Maximum Value over 30%. The last stage should be set at equal to or greater than 25%.  The validity of the table is directly related to the definition of IROL. If an IROL is truly a significant interconnection event, similar in consequence to the August 14 event, then it doesn't matter if the IROL is violated for 30 minutes or 30 seconds, it was violated and it resulted in a blackout. If defined properly, a major portion of the interconnection would be jeopardized when an IROL is violated. If IROL were defined properly, the table would not be needed, as even exceeding the limit for a few minutes would be considered placing the interconnection at extreme risk and thus subject to maximum penalty. Therefore a graduated table may be inappropriate. On the other hand, if IROL is defined as only 300 MW of load loss, then a graduated table may be more fitting.
Agreed. The table has been revised to reflect your suggestion. The definition of an IROL has been revised. If an IROL would result in a cascading outage if left unintended for 30 seconds, then the IROL should not have a Tv of 30 minutes – there should be some special protection system installed to prevent exceeding the IROL and the IROL should have a Tv that is	

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<p>less than 30 seconds.</p> <p>The table posted with the last version of the standard, reflects the industry's request for a sanctions table that develops a sanction based on the magnitude and duration of the instance of exceeding an IROL for time greater than the IROL's <math>T_v</math>.</p>	
<p>Anita Lee; AESO; #2</p>	<p>Propose sanctions are too severe. Suggest using multiples of 2's rather than 5's. I.e. the first group will be 2, 4, 6, 8 and the next group be 4, 6, 8, 10 etc.</p>
<p>Most commenters indicated that the sanctions were appropriate.</p>	
<p>Dan Boezio; AEP; #1                  Ron Ciesiel; SPP; #2                  Bob Cochran; SPS; #1                  Mike Gammon; KCP&amp;L; #1                  Allen Klassen; Westar; #1                  Peter Kuebeck; OG&amp;E; #1                  Mike Stafford; GRDA; #1                  Robert Rhodes; SPP; #2                  Scott Moore; AEP; #1</p>	<p>There are no sanctions listed for a Maximum Value over 30%. The last stage should be set at equal to or greater than 25%.</p> <p>The validity of the table is directly related to the definition of IROL. If an IROL is truly a significant interconnection event, similar in consequences to the August 14 event, then it doesn't matter if the IROL is violated for 5 minutes or 35 minutes, it was violated. If defined properly, a major portion of the interconnection would be jeopardized. If IROL were defined properly, the table would not be needed. Therefore a graduated table may be inappropriate. On the other hand, if IROL is defined as only 300 MW of load loss, then a graduated table may be more fitting.</p>
<p>Agreed. The table has been revised to reflect your suggestion.</p> <p>The definition of an IROL has been revised. If an IROL would result in a cascading outage if left untended for 30 seconds, then the IROL should not have a <math>T_v</math> of 30 minutes – there should be some special protection system installed to prevent exceeding the IROL and the IROL should have a <math>T_v</math> that is less than 30 seconds.</p> <p>The table posted with the last version of the standard, reflects the industry's request for a sanctions table that develops a sanction based on the magnitude and duration of the instance of exceeding an IROL for time greater than the IROL's <math>T_v</math>.</p>	
<p>Mark Fidrych; WAPA; #1</p>	<p>I agree with the concept, I think we need to spend some time on the multipliers.</p>
<p>The SDT modified the table so the sanctions for exceeding an IROL by greater than 25 % are now included. The sanctions table is very closely aligned to one that is in existence in the WECC Region. Any suggestions for its improvement will be appreciated.</p>	
<p>Ralph Rufrano; NYPA; #1                  David Kiguel; Hydro One Networks Inc.; #1                  Roger Champagne; H-Q TransÉnergie; #1                  Greg Campoli; New York ISO (NYISO); #2                  Peter Lebro; National Grid; #1                  Kathleen Goodman; ISO-NE; #2                  Dan Stosick; ISO-NE; #2                  Al Adamson; NYSRC; #2                  Khagan Khan; The IMO Ontario; #2                  Brian Hogue; NPCC; #2                  Guy Zito; NPCC; #2</p>	<p>We support Mr. Gent's comments to the NERC BOT that monetary sanctions are ineffective to ensure compliance and that market mechanisms and letters of increasing severity are more effective.</p> <p>There is an issue with the concept of a monetary sanction matrix and what its implications are. NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement</p>

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	<p>“Plan B,” a “voluntary” approach affording NERC the authority to perform these types of monetary sanctions. NPCC has indicated that any posted Standard, with such a matrix, will not be supported by NPCC, or its members. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and NPCC will continue to work to oppose monetary sanctions.</p>
<p><b>The SDT does not have the authority to modify the sanctions table.</b></p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>There is an issue with the concept of a monetary sanction matrix and what its implications are. ISO-NE, as well as NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement “Plan B,” a “voluntary” approach affording NERC the authority to perform these types of monetary sanctions. ISO-NE has indicated that any posted Standard, with such a matrix, will not be supported by ISO-NE. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and ISO-NE will continue to work to oppose monetary sanctions.</p>
<p><b>The SDT does not have the authority to modify the sanctions table.</b></p>	
<p>Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #</p>	<p>The NYISO agrees with the opinion, voiced by Mr. Gent’s comments to the NERC BOT that monetary sanctions are ineffective to ensure compliance and that market mechanisms and letters of increasing severity are more effective.</p> <p>There is an issue with the concept of a monetary sanction matrix and what its implications are. NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement “Plan B,” a “voluntary” approach affording NERC the authority to perform these types of monetary sanctions. NPCC has indicated that any posted Standard, with such a matrix, will not be supported by NPCC, or its members.</p>
<p><b>The SDT does not have the authority to modify the sanctions table.</b></p>	
<p>Al Corbet; TVA Jerry Landers; TVA</p>	<p>“Duration” is ok, but magnitude (maximum value ) should be taken out</p>

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<p>Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA</p>	
<p>During the last posting of this standard, many commenters indicated that since IROLs have both a magnitude and a duration component, the sanction should be linked to the magnitude of exceeding both the magnitude and the duration of the IROL.</p>	
<p>Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3</p>	<p>Although I agree with the need to increase the penalty to coincide with the magnitude of the violation, these proposed quantities could result in fines that would significantly impact utility operating budgets, customer rates, and even solvency. The starting point is not defined, but a \$1,000 fine that could go to a \$40,000 fine or a \$4,000 fine going to a \$160,000 is a big jump. The reason the IROL was exceeded needs to be addressed. Was it exceeded due to an "Act of God", an N-2 event, a willful violation of procedures, or the refusal to invest in necessary system repairs and upgrades? The difference should be addressed, possibly with a maximum fine.</p>
<p>Agreed. As shown on August 14, the impact of a cascading outage can be quite large. The intent of the sanctions is to motivate people to operate in a manner such that an IROL is not exceeded – and if there are circumstances that cause an IROL to be temporarily exceeded, then the RA should have plans in place to quickly mitigate the IROL before Tv is exceeded.</p>	
<p>Ed Davis; Entergy Services; #1</p>	<p>Entergy agrees with multipliers, but they should only be applied to repeat offenders. NERC should use multipliers if the same event occurs without remediation, or if different events pop up with the same systemic cause.</p>
<p>The multipliers are intended to reflect that allowing the RA's Area to be operated in a manner such that an IROL is exceeded by 20% of its value is more potentially impactful to the interconnection than operating in a manner such that an IROL is exceeded by 3% of its value.</p>	
<p>James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1</p>	<p>We would agree with the table if the sanctions were applied to the appropriate entity. It seems unfair if the sanctions are applied to the RA if TOP did not follow the RA directive fast enough or not at all. One suggestion would require the RA to issue directive within 5 minutes. Below are some possible scenarios where IROL has been violated past Tv. These may be an over simplification, but it may be a good place to start.</p> <p>Scenario 1: RA issues directive in 5 minutes, the TOP does not follow directive fast enough or not at all, TOP gets sanction.</p> <p>Scenario 2: RA issues directive in 5 minutes, the TOP does follow directive fast enough, but directive did not solve problem, RA gets sanction.</p> <p>Scenario 3: RA issues directive past 5 minutes, RA gets sanctions.</p>

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	<p>It has also been suggested in BPAT's group that a one time and one time only pass on the sanctions for the first ever offense, or some kind of phase in of the sanctions. This would be to recognize that there maybe some growing pains in implementing this standard for the first time.</p>
<p>There is nothing to preclude the RA from having a formal agreement with its TOPs that allows the RA to pass on any sanction associated with non-compliance of its TOPs. However, these new standards are set up so that the sanctions are assessed to those who are responsible for meeting the requirement – and in this case, the RA is responsible for ensuring that its RA Area is operated so that no IROLs are exceeded. There is another requirement in this standard that sanctions the TOP (or other entities) who do not comply with the RA's directives.</p>	
<p>John Swanson; NPDD; 2  Darrick Moe; WAPA; 2  Lloyd Linke; WAPA; 2  Paul Koskela; MP; 2  Larry Larson; OTP; 2  Dick Pursley; GRE; 2  Martin Trencce; XCEL; 2  Todd Gosnell; OPPD; 2  Robert Coish; MH; 2  Joe Knight; MAPPCOR; 2  Tom Mielnik; MEC; 2  Dave Jacobson; MH; 2  Delyn Helm; GRE; 2  Jason Weiers; OTP; 2  Dennis Kimm; MEC; 2</p>	<p>There should be no dollar amounts in the sanctions.</p>
<p>The SDT does not have the authority to remove financial sanctions from the sanctions table.</p>	
<p>Lawrence Hochberg; NYSRC; #2</p>	<p>The NYSRC is opposed to monetary sanctions as the only option for dealing with noncompliance as applied in this and other proposed NERC Standards. Unfortunately, direct monetary sanctions invite “gaming the system”, and encourage “business” decisions based on potential profits or savings versus potential penalties. Instead of monetary sanctions, the NYSRC prefers that NERC have the authority to issue letters of increasing degrees of severity to communicate noncompliance of mandatory standards. The NYSRC and NPCC now rely on a more stringent and mandatory process than monetary sanctions to assure compliance with reliability standards. Compliance is now mandatory through the contractual agreements and tariffs that all participants need in order to conduct business. The use by the NYSRC and NPCC of letters to regulatory agencies and other oversight bodies for reporting noncompliance has demonstrated that letter sanctions are a more effective tool for ensuring adherence to standards. Such letters establish the</p>



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	<p>basis for liability in the event of a subsequent criterion violation, and in the case of market participant noncompliance, threaten the violator’s ability to do business with or through an ISO or RTO. Moreover, letters that communicate noncompliance best allow focus on the “root cause” of a violation, as well as its reliability impact.</p> <p>Therefore, the NYSRC recommends that this and other NERC Standards expressly provide that letter sanctions be used in addition to or instead of monetary sanctions under circumstances in which they would be an equally or more effective enforcement mechanism.</p>
<p>The SDT does not have the authority to remove financial sanctions from the sanctions table.</p>	
<p><b>Other Comments</b></p>	
<p>Khaqan Khan; IMO; #2</p>	<p>(Checked Yes and No)</p>
<p>Dale McMaster; AESO; #2  Ed Riley; CAISO; #2  Sam Jones; ERCOT; #2  Don Tench ; IMO; #2  Dave LaPlante; ISO_NE; #2  William Phillips; MISO; #2  Karl Tammar; NYISO; #2  Bruce Balmat; PJM; #2  Carl Monroe; SPP ; #2</p>	<p>The group did not reach consensus</p>

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

**17. Replace ‘action plan’ with ‘process, procedure or plan’**

Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

**Summary Consideration:** All commenters but one were in favor of this addition.

Yes Responses	
Michael Zahorik; ATC; #1	We call them contingency plans
<b>Yes, different entities have different names for these documents.</b>	
Lee Xanthakos; SCE&G; #1	
Karl Kohlrus; City Water, Light & Power; # 5	
Raj Rana; AEP; 1,3,5,6	
John Blazekovich; Exelon; 1,2,5,6	
William Pope; Gulf Power Co; #3	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	
William Smith; Allegheny Power; #1	
Peter Burke; ATC; #1	
Mark Fidrych; WAPA; #1	
Anita Lee; AESO; #2	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2	
Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<p>Steve Wallace; Seminole Electric Coop ;#4  Amy Long; Lakeland Electric; #1  Richard Gilbert; Lakeland Electric; #3  Ron Donahey; Tampa Electric Company; #3  Beth Young; Tampa Electric Company ;#3  Roger Hunnicutt ; Gainesville Reg Utl; #5  Roger Westphal ;City of Gainesville; #3  Greg Woessner ;Kissimmee Utility Auth;#3  Ben Sharma ;Kissimmee Utility Auth;#3  Garry Baker; JEA ;#1  Ed DeVarona; Florida Power &amp; Light Co. ;#1  Preston Pierce; Progress Energy Florida ;#1  Bob Remley; Clay Electric Cooperative; #4  Joe Krupar; FMPA; #3  Paul Elwing; Lakeland Electric; #5  Joe Roos; Ocala Electric Utility ;#3</p>	
<p>Greg Campoli; NYISO; #2  James Castle; NYISO ;#2  John Ravalli; NYISO; #2  Karl Tammar; NYISO; #2  Robert Waldele; NYISO; #2  Michael Calimano; NYISO; #</p>	
<p>Ralph Rufrano; NYPA; #1  David Kiguel; Hydro One Networks Inc.; #1  Roger Champagne; H-Q TransÉnergie; #1  Greg Campoli; New York ISO (NYISO); #2  Peter Lebro; National Grid; #1  Kathleen Goodman; ISO-NE; #2  Dan Stosick; ISO-NE;#2  Al Adamson; NYSRC;#2  Khagan Khan; The IMO Ontario; #2  Brian Hogue; NPCC;#2  Guy Zito; NPCC;#2</p>	
<p>Al Corbet; TVA  Jerry Landers; TVA  Jennifer Weber; TVA  Edd Forsythe; TVA  Larry Goins; TVA  Mark Creech; TVA  Kathy Davis; TVA</p>	
<p>Carter Edge; SEPA ; #4 &amp; 5</p>	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<p>William Gaither; SC Public Svc Auth; #1  Ken Skroback; AL Elec Coop ; #1  Roger Brand; Muni Elec Auth of GA; #1  Phil Creech; Progress Energy - Carolinas; #1  Gene Delk; SCE&amp;G; #1  Al McMeekin; SCE&amp;G; #1  Randy Hunt; Dominion – VA Pwr; #1  Doug Newbauer; GA System Ops; #1  Mike Clements; TVA; #1  Don Reichenbach; Duke Energy; #1  Lynna Estep; SERC; #2  Dan Kay; S Mississippi Elec Pwr Assoc; #1  Matt Ansley; Southern Company; #1  Uma Gangadharan; Entergy; #1</p>	
<p>R. Peter Mackin; TRANC; #1</p>	
<p>Roman Carter; SCGEM; #5, 6  Joel Dison; SCGEM; #5, 6  Tony Reed; SCGEM; #5, 6  Lloyd Barnes; SCGEM; #5, 6  Clifford Shepard; SCGEM; #5, 6  Lucius Burris; SCGEM; #5, 6  Roger Green; SCGEM; #5, 6</p>	
<p>Marc Butts; Southern Company Svcs; #1  Raymond Vice; Southern Company Svcs; #1  Dan Baisden; Southern Company Svcs; #1  Jim Griffith; Southern Company Svcs; #1  Phil Winston; Georgia Power Company; #3  Jim Viikinsalo; Southern Company Svcs; #1  Mike Miller; Southern Company Svcs; #1  Monroe Landrum; Southern Company Svcs; #1  Gwen Frazier; Southern Company Svcs; #1  Steve Williamson; Southern Company Svcs; #1  Rod Hardiman; Southern Company Svcs; #1  Jonathan Glidewell; Southern Company Svcs; 1  Dan Richards; Southern Company Svcs; #1  Mike Hardy; Southern Company Svcs; #1  David Majors; Georgia Power Company; #3</p>	
<p>Khaqan Khan; IMO; #2</p>	
<p>Jalal Babik; Dominion VA Power; #1  Craig Crider; Dominion VA Power; #1  Jack Kerr; Dominion VA Power; #1</p>	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Bill Thompson; Dominion VA Power; #1	
Lawrence Hochberg; NYSRC; #2	
John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trence; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPP COR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	
Richard Kafka; Pepco; #3	
Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
John Horakh; MAAC; #2	
Ken Githens; Allegheny Energy; #5	
Ed Davis; Entergy Services; #1	
Ed Riley; CA-ISO; #2	
<b>Other Responses</b>	
Kathleen Goodman; ISO-NE; #2	Do not believe there should be a requirement for either. Operators should be appropriately trained and provided with strategies to take the correct actions necessary to operate a system reliably.  (Checked both Yes and No)
One of the best training tools is a well-planned document that outlines appropriate actions for various scenarios. Agreed that system operators should be trained and provided with strategies – and this standard requires that the strategies be documented as processes, procedures or plans.	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

***Other Questions about this Standard***

**18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?**

**Summary Consideration:**

The SDT asked questions 18-20 to determine if there was a reason to ballot this standard before issues related to the standards development process, but outside the scope of the SDT, were addressed. When this standard was balloted the first time, most of the reasons for not approving the standard were related to either the Functional Model, Field Testing or Financial Sanctions. The SDT cannot make changes to any of these items. The SDT does not want to ballot the standard and have it fail because of these issues which are outside the technical content of the standard. Many of the balloters who voted against the standard, have declined to answer these questions, so the SDT does not know if these balloters have changed their mind and will vote on the standard based on technical content rather than on an understanding of the Functional Model, Financial Sanctions, or Field Testing.

Yes Responses	
Some of the following: Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	We are a group and some members represent members of the Ballot Pool.
Lee Xanthakos; SCE&G; #1	
Karl Kohlrus; City Water, Light & Power; # 5	
Raj Rana; AEP; 1,3,5,6	
John Blazekovich; Exelon; 1,2,5,6	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
William Pope; Gulf Power Co; #3	
James Murphy; BPAT;#1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	
Patti Metro; FRCC; #2 Linda Campbell ;FRCC ;#2 Steve Wallace; Seminole Electric Coop ;#4 Amy Long; Lakeland Electric; #1 Richard Gilbert; Lakeland Electric; #3 Ron Donahey; Tampa Electric Company; #3 Beth Young; Tampa Electric Company ;#3 Roger Hunnicutt ; Gainesville Reg Utl; #5 Roger Westphal ;City of Gainesville; #3 Greg Woessner ;Kissimmee Utility Auth;#3 Ben Sharma ;Kissimmee Utility Auth;#3 Garry Baker; JEA ;#1 Ed DeVarona; Florida Power & Light Co. ;#1 Preston Pierce; Progress Energy Florida ;#1 Bob Remley; Clay Electric Cooperative; #4 Joe Krupar; FMPA; #3 Paul Elwing; Lakeland Electric; #5 Joe Roos; Ocala Electric Utility ;#3	
William Smith; Allegheny Power; #1	
Peter Burke; ATC; #1	
Mark Fidrych; WAPA; #1	
Anita Lee; AESO; #2	
Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Dan Stosick; ISO-NE;#2 Al Adamson; NYSRC;#2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC;#2 Guy Zito; NPCC;#2	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
Khaqan Khan; IMO; #2	
Kathleen Goodman; ISO-NE; #2	
R. Peter Mackin; TRANC; #1	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
Lawrence Hochberg; NYSRC; #2	
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1	



**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Bill Thompson; Dominion VA Power; #1	
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	
Ed Davis; Entergy Services; #1	
Ken Githens; Allegheny Energy; #5	
Ed Riley; CA-ISO; #2	
Some of the following Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
Richard Kafka; Pepco; #3	
Some of the following: John Swanson;NPDD;2 Darrick Moe;WAPA;2 Lloyd Linke;WAPA;2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trence; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
<b>'No' Responses</b>	
Some of the following Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
John Horakh; MAAC; #2	
Some of the following: John Swanson; NPDD; 2 Darrick Moe; WAPA; 2 Lloyd Linke; WAPA; 2 Paul Koskela; MP; 2 Larry Larson; OTP; 2 Dick Pursley; GRE; 2 Martin Trence; XCEL; 2 Todd Gosnell; OPPD; 2 Robert Coish; MH; 2 Joe Knight; MAPPCOR; 2 Tom Mielnik; MEC; 2 Dave Jacobson; MH; 2 Delyn Helm; GRE; 2 Jason Weiers; OTP; 2 Dennis Kimm; MEC; 2	
Michael Zahorik; ATC; #1	
<b>Other Responses</b>	
Dale McMaster; AESO; #2 Ed Riley; CAISO; #2 Sam Jones; ERCOT; #2 Don Tench ; IMO; #2 Dave LaPlante; ISO_NE; #2 William Phillips; MISO; #2 Karl Tammar; NYISO; #2 Bruce Balmat; PJM; #2 Carl Monroe; SPP ; #2	We are all members of the ballot pool and intend to vote individually. There was no discussion of the remaining questions as a group response seemed inappropriate.
<p>The SDT asked questions 18-20 to determine if there was a reason to ballot this standard before issues related to the standards development process, but outside the scope of the SDT, were addressed. When this standard was balloted the first time, most of the reasons for not approving the standard were related to either the Functional Model, Field Testing or Financial Sanctions. The SDT cannot make changes to any of these items. The SDT does not want to ballot the standard and have it fail because of these issues which are outside the technical content of the standard.</p>	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

**19. Do you agree with the Technical Content**

If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists solely of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are not considered part of the 'technical content' of the standard.

Member & agree with Technical Content	
Some of the following Dan Boezio; AEP; #1 Ron Ciesiel; SPP; #2 Bob Cochran; SPS; #1 Mike Gammon; KCP&L; #1 Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	Depending upon the response to our comments and what revisions are made, we can agree or disagree with the technical content of this standard.
Alan Gale; City of Tallahassee; #5 Rusty Foster; City of Tallahassee; #3	I agree with the technical content as amended by my comments. I will reserve judgment until I see how they are incorporated.
Lee Xanthakos; SCE&G; #1	I'm not sure that the Requirements of this standard represent technical content, but since I pretty much agree with the requirements so I checked box 1.
Karl Kohlrus; City Water, Light & Power; # 5	
William Pope; Gulf Power Co; #3	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	
Anita Lee; AESO; #2	
Mark Fidrych; WAPA; #1	
Some of the following: Greg Campoli; NYISO; #2 James Castle; NYISO; #2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2	
Chifong Thomas; PG&E; #1	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
Roman Carter; SCGEM; #5, 6 Joel Dison; SCGEM; #5, 6 Tony Reed; SCGEM; #5, 6 Lloyd Barnes; SCGEM; #5, 6 Clifford Shepard; SCGEM; #5, 6 Lucius Burris; SCGEM; #5, 6 Roger Green; SCGEM; #5, 6	
R. Peter Mackin; TRANC; #1	
Ed Riley; CA-ISO; #2	
Marc Butts; Southern Company Svcs; #1 Raymond Vice; Southern Company Svcs; #1 Dan Baisden; Southern Company Svcs; #1 Jim Griffith; Southern Company Svcs; #1 Phil Winston; Georgia Power Company; #3 Jim Viikinsalo; Southern Company Svcs; #1 Mike Miller; Southern Company Svcs; #1 Monroe Landrum; Southern Company Svcs; #1 Gwen Frazier; Southern Company Svcs; #1 Steve Williamson; Southern Company Svcs; #1 Rod Hardiman; Southern Company Svcs; #1 Jonathan Glidewell; Southern Company Svcs; 1 Dan Richards; Southern Company Svcs; #1 Mike Hardy; Southern Company Svcs; #1 David Majors; Georgia Power Company; #3	
Richard Kafka; Pepco; #3	
<b>Member &amp; do not agree with Technical Content</b>	
Some of the following: Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #	As indicated in our responses, the NYISO agrees with much of the technical content of this standard and offers suggestions and opinions on the portions we disagree with.
Peter Burke; ATC; #1	ATC agrees with some of the technical content of this standard but is concerned that this question requires us to agree to all of the technical content of this standard and if we do not, we should check "I do not agree". The SDT is on the correct path in achieving approval of this standard but this latest version presents some problems / concerns.

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<p>Jalal Babik; Dominion VA Power; #1                  Craig Crider; Dominion VA Power; #1                  Jack Kerr; Dominion VA Power; #1                  Bill Thompson; Dominion VA Power; #1</p>	<p>See comments under items 1, 2, 4, 5, 9, and 11.</p>
<p>Gerald Rheault; Manitoba Hydro; #1,3,5,6</p>	<p>Manitoba Hydro has technical concerns relative to the concept of IROL as referenced in this Standard. These concerns have been provided to the SDT in previous postings of this Standard and are further elaborated upon in question 12 of this comment document. If the SDT can satisfactorily address these concerns, then Manitoba Hydro would support this Standard.</p>
<p>The SDT has tried to address your technical concerns.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>Example: 208 requires documentation of the RA's directives and the actions taken. Also, although the levels of non-compliance are not considered as "technical content," for the purpose of explaining the disagreement, we need to reference Level 1 non-compliance, which is directly related to the requirement. If the actions were taken and the directives were followed, why would an operator be found non-compliant for not documenting such actions and directives?</p>
<p>If the actions aren't documented, how will anyone know if the directives were followed? The documentation required, is simply the same documentation that is typically captured in most control room operating logs. The language in the standard allows the RA to choose any method of documentation – the intent isn't to require new systems be installed or implemented – the intent is to ensure that all involved recognize the seriousness of operating within IROLs – and there needs to be a method of ensuring that the work practices that support this behavior can be assessed.</p>	
<p>Ken Githens; Allegheny Energy; #5</p>	
<p>William Smith; Allegheny Power; #1</p>	
<p>Ed Davis; Entergy Services; #1</p>	
<p>Lawrence Hochberg; NYSRC; #2</p>	
<p>Ralph Rufrano; NYPA; #1                  David Kiguel; Hydro One Networks Inc.; #1                  Roger Champagne; H-Q TransÉnergie; #1                  Greg Campoli; New York ISO (NYISO); #2                  Peter Lebro; National Grid; #1                  Kathleen Goodman; ISO-NE; #2                  Dan Stosick; ISO-NE; #2                  Al Adamson; NYSRC; #2                  Khagan Khan; The IMO Ontario; #2                  Brian Hogue; NPCC; #2                  Guy Zito; NPCC; #2</p>	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Raj Rana; AEP; 1,3,5,6	
<b>Not a member &amp; agree with Technical Content</b>	
John Horakh; MAAC; #2	
<b>Not a member &amp; do not agree with Technical Content</b>	
Carter Edge; SEPA ; #4 & 5 William Gaither; SC Public Svc Auth; #1 Ken Skroback; AL Elec Coop ; #1 Roger Brand; Muni Elec Auth of GA; #1 Phil Creech; Progress Energy - Carolinas; #1 Gene Delk; SCE&G; #1 Al McMeekin; SCE&G; #1 Randy Hunt; Dominion – VA Pwr; #1 Doug Newbauer; GA System Ops; #1 Mike Clements; TVA; #1 Don Reichenbach; Duke Energy; #1 Lynna Estep; SERC; #2 Dan Kay; S Mississippi Elec Pwr Assoc; #1 Matt Ansley; Southern Company; #1 Uma Gangadharan; Entergy; #1	We are a group and some members represent members of the Ballot Pool.
<b>Other Comments</b>	
John Blazekovich; Exelon; 1,2,5,6	Before we determine how Exelon will cast it's votes we would like to see revision to the definitions (as commented) and some direction on how compliance with this Standard will be accomplished on a "real time" basis.
Khaqan Khan; IMO; #2	Checked both agree and disagree with technical content– member of Ballot Pool -

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

**20. Vote based on technical content**

If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process?

This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

<b>Member &amp; will vote based on Content</b>	
Peter Burke; ATC; #1	ATCs approach is to review each standard on its own merits
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	BPAT may or may not vote against this standard based on changes to the Functional Model and based on the structure of the Financial Sanctions. BPAT has not determined this yet.
Karl Kohlrus; City Water, Light & Power; # 5	
William Pope; Gulf Power Co; #3	
John Blazekovich; Exelon; 1,2,5,6	
Raj Rana; AEP; 1,3,5,6	
Gerald Rheault; Manitoba Hydro; #1,3,5,6	
Anita Lee; AESO; #2	
Mark Fidrych; WAPA; #1	
Chifong Thomas; PG&E; #1 Glenn Rounds; PG&E; #1 Ben Morris; PG&E; #1	
Kathleen Goodman; ISO-NE; #2	
William Smith; Allegheny Power; #1	
R. Peter Mackin; TRANC; #1	
Greg Campoli; NYISO; #2 James Castle; NYISO ;#2 John Ravalli; NYISO; #2 Karl Tammar; NYISO; #2 Robert Waldele; NYISO; #2 Michael Calimano; NYISO; #2	
Some of the following: Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1	

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<p>Kathleen Goodman; ISO-NE; #2          Dan Stosick; ISO-NE; #2          Al Adamson; NYSRC; #2          Khagan Khan; The IMO Ontario; #2          Brian Hogue; NPCC; #2          Guy Zito; NPCC; #2</p>	
<p>Roman Carter; SCGEM; #5, 6          Joel Dison; SCGEM; #5, 6          Tony Reed; SCGEM; #5, 6          Lloyd Barnes; SCGEM; #5, 6          Clifford Shepard; SCGEM; #5, 6          Lucius Burris; SCGEM; #5, 6          Roger Green; SCGEM; #5, 6</p>	
<p>Marc Butts; Southern Company Svcs; #1          Raymond Vice; Southern Company Svcs; #1          Dan Baisden; Southern Company Svcs; #1          Jim Griffith; Southern Company Svcs; #1          Phil Winston; Georgia Power Company; #3          Jim Viikinsalo; Southern Company Svcs; #1          Mike Miller; Southern Company Svcs; #1          Monroe Landrum; Southern Company Svcs; #1          Gwen Frazier; Southern Company Svcs; #1          Steve Williamson; Southern Company Svcs; #1          Rod Hardiman; Southern Company Svcs; #1          Jonathan Glidewell; Southern Company Svcs; 1          Dan Richards; Southern Company Svcs; #1          Mike Hardy; Southern Company Svcs; #1          David Majors; Georgia Power Company; #3</p>	
<p>Khaqan Khan; IMO; #2</p>	
<p>Ed Riley; CA-ISO; #2</p>	
<p>Richard Kafka; Pepco; #3</p>	
<p>Ken Githens; Allegheny Energy; #5</p>	
<p>Ed Davis; Entergy Services; #1</p>	
<p>Alan Gale; City of Tallahassee; #5          Rusty Foster; City of Tallahassee; #3</p>	
<p>Lawrence Hochberg; NYSRC; #2</p>	
<p>Some of the following          Dan Boezio; AEP; #1          Ron Ciesiel; SPP; #2          Bob Cochran; SPS; #1          Mike Gammon; KCP&amp;L; #1</p>	



**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Allen Klassen; Westar; #1 Peter Kuebeck; OG&E; #1 Mike Stafford; GRDA; #1 Robert Rhodes; SPP; #2 Scott Moore; AEP; #1	
<b>Member &amp; will vote against standard based on other issues</b>	
James Murphy; BPAT; #1 Mike Viles; BPAT; #1 Richard Spence; BPAT; #1 Don Watkins; BPAT; #1 Don Gold; BPAT; #1 Marv Landauer; BPAT; #1	BPAT may or may not vote against this standard based on changes to the Functional Model and based on the structure of the Financial Sanctions. BPAT has not determined this yet.
Jalal Babik; Dominion VA Power; #1 Craig Crider; Dominion VA Power; #1 Jack Kerr; Dominion VA Power; #1 Bill Thompson; Dominion VA Power; #1	
Al Corbet; TVA Jerry Landers; TVA Jennifer Weber; TVA Edd Forsythe; TVA Larry Goins; TVA Mark Creech; TVA Kathy Davis; TVA	
Some of the following: Ralph Rufrano; NYPA; #1 David Kiguel; Hydro One Networks Inc.; #1 Roger Champagne; H-Q TransÉnergie; #1 Greg Campoli; New York ISO (NYISO); #2 Peter Lebro; National Grid; #1 Kathleen Goodman; ISO-NE; #2 Dan Stosick; ISO-NE; #2 Al Adamson; NYSRC; #2 Khagan Khan; The IMO Ontario; #2 Brian Hogue; NPCC; #2 Guy Zito; NPCC; #2	
<b>Not Applicable – not a member of BP</b>	
John Horakh; MAAC; #2	

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**21. Other Comments about this Standard**

<p>John Swanson; NPDD; 2  Darrick Moe; WAPA; 2  Lloyd Linke; WAPA; 2  Paul Koskela; MP; 2  Larry Larson; OTP; 2  Dick Pursley; GRE; 2  Martin Trence; XCEL; 2  Todd Gosnell; OPPD; 2  Robert Coish; MH; 2  Joe Knight; MAPP COR; 2  Tom Mielnik; MEC; 2  Dave Jacobson; MH; 2  Delyn Helm; GRE; 2  Jason Weiers; OTP; 2  Dennis Kimm; MEC; 2</p>	<p>We support the prerequisite approval provided on page 2 for the implementation plan of this Standard 200 in which Standard 600 Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard must be implemented before this standard can be implemented. However, we believe that another prerequisite approval is that the NERC SAC verify that this Standard 200 does not conflict with Standard 600. Otherwise, there will be problems in implementing the two standards. If the SAC determines there is a conflict, then the SAC should send one or both standards back to the drafting teams to be resolved.</p> <p>The dollar sanctions should be removed from all sections of this standard. The sanctions sections should be replaced with:</p> <p>(1) Sanctions for noncompliance shall be applied consistent with the NERC compliance and enforcement matrix, but no financial penalties shall be enforced. Noncompliance sanctions shall consist of letters, issued in accordance with the matrix.</p>
<p>The SAC does not get involved in a technical review of the standards. The SAC's function is to ensure that the standards process is being followed. It is up to the industry to comment on any disconnects between standards.</p>	
<p>The SDT does not have the authority to remove financial sanctions. The SDT has informed the SAC that there are many industry participants who are opposed to financial sanctions, and has asked the SAC to address this issue before this standard is balloted.</p>	
<p>Marc Butts; Southern Company Svcs; #1  Raymond Vice; Southern Company Svcs; #1  Dan Baisden; Southern Company Svcs; #1  Jim Griffith; Southern Company Svcs; #1  Phil Winston; Georgia Power Company; #3  Jim Viikinsalo; Southern Company Svcs; #1  Mike Miller; Southern Company Svcs; #1  Monroe Landrum; Southern Company Svcs; #1  Gwen Frazier; Southern Company Svcs; #1  Steve Williamson; Southern Company Svcs; #1  Rod Hardiman; Southern Company Svcs; #1  Jonathan Glidewell; Southern Company Svcs; 1  Dan Richards; Southern Company Svcs; #1  Mike Hardy; Southern Company Svcs; #1  David Majors; Georgia Power Company; #3</p>	<p>We would like to express our appreciation to the SDT for taking the time and trouble to revisit the comments on this standard. We realize the time it takes to participate on these teams and the dedication to it. While the last version of this standard was voted down this version is greatly improved and should pass the test. Thank you all for your efforts to listen to the industry and the people who operate the power systems on a daily basis and making this a workable product. We applaud you.</p>

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<p>Roman Carter; SCGEM; #5, 6          Joel Dison; SCGEM; #5, 6          Tony Reed; SCGEM; #5, 6          Lloyd Barnes; SCGEM; #5, 6          Clifford Shepard; SCGEM; #5, 6          Lucius Burris; SCGEM; #5, 6          Roger Green; SCGEM; #5, 6</p>	
<p><b>The SDT very much appreciates your support.</b></p>	
<p>Khaqan Khan; IMO; #2</p>	<p>1. The footnote on Std 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOL’s &amp; Transfer Capabilities” i.e. Std 600. Such requirements with respect to IROL are not mentioned in existing standard Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.</p> <p>2. The IMO supports the comments submitted by ISO/RTO Council- Standards Review Committee as well as the CP-9 Group.</p>
<p>The footnote on Requirement 201 was placed at the request of many industry commenters who wanted a specific reference to Standard 600 included in this standard. Since the requirement to identify IROLs was transferred to the Determine Facility Ratings Standard, the footnote is not in the revised standard. Please see the SDT’s consideration of the ISO/RTO Council Standards Review Committee and the SDT’s consideration of the comments submitted by the NPCC CP-9 Group.</p>	
<p>Peter Burke; ATC; #1</p>	<p>202 Monitoring</p> <p>1. The SDT switches between the terms “operations personnel” and “system operators.” It seems that both of these terms refer to the same people. If so, could the SDT choose a single term to refer to that group? If not, could the SDT explain the difference?</p> <p>2. Noncompliance</p> <p>(4) i. This seems to be identical to (ii). Could the SDT clarify the difference?</p> <p>(4) iii. How would this be reviewed? It seems that this is a subjective item, would the SDT please clarify?</p> <p>203 Analyses and Assessment</p> <p>3. This goes back to our earlier comments about the definition of a Real-Time Assessment. It seems what the SDT is attempting to do is perform two different studies in this one requirement.</p> <p>Compliance Monitoring Process</p> <p>(3) ii. The Operational Planning Analysis is a study of the next day using forecasted data, transmission outage data, and generation outage data and can</p>

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	<p>only attempt to see what may happen the next day. Given that statement, how can the RA be assured that it will exceed an IROL? Suggestion: change the “will exceed” to “may exceed.”</p> <p>(3) iv. Remove the statement “or is expected to exceed any IROLs.” The Real-Time assessment should be limited to real-time time frame and should be extended to review the time between Real-Time Assessments.</p> <p>Non Compliance</p> <p>(3) i. Is the “time” that an Operational Planning Analysis or Real-Time Assessment was conducted sufficient enough indication that Operational Planning Analysis or Real-Time Assessment was conducted?</p> <p>204 Actions</p> <p>(1) i. ATC is troubled by the term may be exceeded. How can an RA be required to perform action on a “may” situation? Suggestion would be to have the RA notify other RA along with members in the RA’s area that an IROL was not yet exceeded but the potential for an IROL to be exceeded was identified.</p> <p>We would point out that there is no noncompliance level for the above concern so therefore should this may not be appropriate as a NERC standard.</p>
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**202 Monitoring**

1. The term, ‘Operations Personnel’ was originally intended to include a group of people who work in the area of system operations, but was not intended to be limited to system operators. System Operators are the on-shift personnel assigned to monitor and control the system. Other commenters also requested clarification of the use of these terms. The standard has been changed to use just the term, ‘system operators.’

4 (i) indicates that the system operators don’t have information to let them know what their IROLs are – 4(ii) indicates that the system operators don’t have the ability to look at real-time data and compare it to IROLs.

The data has to be accessible in real-time and that availability can be observed by the Compliance Monitor.

**203 Analyses and Assessment**

3.ii - The system operator is expected to notice if real-time assessments conducted every 30 minutes show that limits are being approached. The system operator is expected to interpret the real-time assessments in context of the day’s operations, and is expected to notice changes over time so actions can be taken to prevent exceeding any IROL. The standard doesn’t specify specific real-time assessment methodology – each RA has a unique system, and may be looking for different specifics based on its current conditions.

3.iv – The real-time assessment isn’t done in isolation, it is part of an overall process of conducting real-time assessments every 30 minutes. The results of these assessments should indicate to the RA when emerging conditions are such that an IROL is being approached – and the RA is expect to act before the IROL is exceeded. The existing language accurately represents what was intended by this requirement.

Noncompliance level 3i - The Compliance Monitoring process provides a list of questions that the Compliance Monitor will use to determine if the system operator has been interpreting the results of the analyses and assessments with respect to IROLs. The responses to those questions will show the Compliance Monitor whether an analysis or an assessment was conducted. If the system operator

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<p>conducted an assessment but doesn't remember what it showed, then that was not effective enough to meet this requirement.</p> <p>This has to be assessed in context of the summary of all the questions that are asked of the real-time system operator. This is not a one-for-one alignment between the first question and an associated level of non-compliance. This has been modified to clarify what was intended.</p> <p>204 Actions</p> <p>1i - The SDT thinks 'may' is the right word – one of the focuses of this standard is to try and identify situations that may lead to exceeding an IROL and to take action to prevent exceeding that IROL. The industry commenters have supported this position.</p> <p>If the RA takes preventive action, then there is no non-compliance because the RA has achieved its objective of operating within IROLs. The system operator needs to take proactive actions to prevent exceeding an IROL for an 'emerging' condition.</p>	
<p>James Murphy; BPAT; #1                  Mike Viles; BPAT; #1                  Richard Spence; BPAT; #1                  Don Watkins; BPAT; #1                  Don Gold; BPAT; #1                  Marv Landauer; BPAT; #1</p>	<p>BPAT would like the system operator to be identified as RA system operators where applicable. 202(b)(3) &amp; 202(d)(3)(i)</p> <p>In section 200 (2) please identify the name of section 604 where used.</p> <p>Please add the standard number when other standards are mentioned.</p> <p>Please include in 208 (d) (3) "(4) Time the actions were taken. This may be important to determine if directive were followed in a timely manner.</p>
<ol style="list-style-type: none"> <li>1. The word, 'its' has been added to the 202(b)(3) and 202(d)(3)(i) to clarify that the system operators are the RA's system operators.</li> <li>2. The reference to Standard 600 has been deleted because the requirement to identify IROLs has been transferred to Standard 600.</li> <li>3. Logging the date and time is considered, 'good utility practice' and shouldn't have to be specifically proscribed.</li> </ol>	
<p>Patti Metro; FRCC; #2                  Linda Campbell ;FRCC ;#2                  Steve Wallace; Seminole Electric Coop ;#4                  Amy Long; Lakeland Electric; #1                  Richard Gilbert; Lakeland Electric; #3                  Ron Donahey; Tampa Electric Company; #3                  Beth Young; Tampa Electric Company ;#3                  Roger Hunnicutt ; Gainesville Reg Utl; #5                  Roger Westphal ;City of Gainesville; #3                  Greg Woessner ;Kissimmee Utility Auth;#3                  Ben Sharma ;Kissimmee Utility Auth;#3                  Garry Baker; JEA ;#1                  Ed DeVarona; Florida Power &amp; Light Co. ;#1                  Preston Pierce; Progress Energy Florida ;#1                  Bob Remley; Clay Electric Cooperative; #4                  Joe Krupar; FMPA; #3                  Paul Elwing; Lakeland Electric; #5</p>	<p>1. The Compliance Monitoring Process for 202-208 requires that certain information be provided to the Compliance Monitor "upon request", but does not indicate how long the Reliability Authority has to provide the information. A possible revision could be that " upon request the Reliability Authority will provide the following information to the Compliance Monitor within 5 business days".</p> <p>204</p> <p>Requirements</p> <p>2. Who is responsible for implementing an IROL mitigation plan? Transmission Owner? RA? Does the RA develop the plan or the Transmission Owner?</p> <p>3. Footnote 2 indicates the no action "may be acceptable as long as it is documented", what type of documentation is required?</p> <p>4. Non-Compliance Level 4 - Should be revised to indicate that the Reliability Authority is non-compliant because no actions were taken to mitigate an IROL or to document the violation.</p> <p>205</p>

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<p>Joe Roos; Ocala Electric Utility ;#3</p>	<p>5. Measure (3)(i) should be revised to indicate that the Compliance Monitor should be notified within five business days of determining the data issue could not be resolved.</p> <p>6. Non-compliance levels – Why is there a Level 1 and Level 2, rather that Level 3 and Level 4. It appears that this information is very important to maintain a reliable system. In additions, if there is a measure for notifying the Compliance Monitor when data issues cannot be resolved, a level of non-compliance should be included when this notification is not provided.</p> <p>207</p> <p>7. Requirements and Levels of Non-Compliance – from this it appears that the Reliability Authority will work with other entities to develop processes, procedures, and plans, but the levels of non-compliance indicated that these activities could be developed with no input. What good is this if an Reliability Authority can't perform the mitigation? Seems very broad and burdensome to the Reliability Authority.</p> <p>208</p> <p>8. Requirements - The standard does not address seams issues. Although 201 requires Reliability Authorities that share facilities to develop IROL procedures and lists there needs to be a requirement included that would allow one Reliability Authority to give directives to another Reliability Authority.</p> <p>9. Levels of Non-Compliance – If an entity does not follow the Reliability Authority directive, and the Reliability Authority does not have the ability to take action, other than the financial penalty there is no way to make entities comply with directives and reliability will be jeopardized.</p>
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1. The term, "on request" was intended to mean during an audit. The standard has been changed to indicate this more clearly.
  2. The RA is responsible for having the processes, procedures or plans and for implementing them. The standard is silent on who needs to develop the plan. Currently, at least one of the regions has a technical committee that develops some of these documents for use in a sub-region or region-wide basis.
  3. The documentation in footnote 2 is the operator log or other data source addressed in measure 204(b)(1)(i).
  4. The purpose of this standard is to prevent an IROL from ever being exceeded. There are two ways an IROL can be exceeded – as a result of an emerging event that the RA failed to control – or as a result of a serious incident where the RA wasn't able to direct actions quickly enough to resolve the incident within the IROL's Tv. The industry was asked to endorse this approach in an earlier posting, and the most industry commenters agreed that the RA should be held accountable for the results of actions.
  5. Your suggestion was implemented and is reflected in the revised standard.
  6. The SDT could not identify a method for determining that data hadn't been provided and the Compliance Monitor hadn't been notified.
  6. Since most commenters indicated support for these levels of non-compliance, the SDT did not change them.
  7. If the processes, procedures or plans are developed without coordination with entities that are required to take actions, then the RA is non-compliant. The RA needs to ensure that the entities that are expected to take actions under specified conditions (with respect to IROLs) are aware, in advance, of the conditions and the actions that need to be taken.
  8. Under the Functional Model, all RAs are created equal. Developing a requirement that gives one RA the authority to direct the actions of another RA is outside the scope of the Functional Model. However, under the processes, procedures and plans, there may be documents that outline a process agreed upon by all involved RAs.
- There is another standard, Coordinate Operations between RAs that addresses the more complex coordination that takes place between RAs in support of interconnection reliability. This standard's focus is on the actions the RA takes to control its own RA Area with respect to monitoring and operating so that no IROLs are exceeded. The SDT modified Requirement 201 to better address the seams issues when establishing which Facilities are subject to IROLs, and when establishing IROLs for those Facilities.
9. Agreed. Financial sanctions are intended to provide incentive to follow the RA's directives. If an entity doesn't take the actions requested, the RA needs to be ready to direct other actions to protect the reliability of the interconnection - up to and including issuing a directive to drop firm load. The RA needs to have the authority to issue directives and have those directives followed. Each RA may have agreements with entities under its direction that include language that addresses the 'passing on' of any financial sanctions due to lack of compliance with the RAs directives. Ensuring reliability is the RA's objective.

Lawrence Hochberg; NYSRC; #2  
 Ralph Rufrano; NYPA; #1  
 David Kiguel; Hydro One Networks Inc.; #1  
 Roger Champagne; H-Q TransÉnergie; #1  
 Greg Campoli; New York ISO (NYISO); #2  
 Peter Lebro; National Grid; #1  
 Kathleen Goodman; ISO-NE; #2  
 Dan Stosick; ISO-NE; #2  
 Al Adamson; NYSRC; #2

1. The footnote on Std 201 states that each IROL is developed by following the requirements in "Determine Facility Ratings, SOL's & Transfer Capabilities" i.e. Std 600. Such requirements with respect to IROL are not mentioned in Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.
2. Owing to the fact that "Tv" value can be smaller than 30 minutes, it is suggested to update the sub-section 203 (b) (ii) as follows: " The Reliability authority shall conduct a Real-time Assessment

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<p>Khagan Khan; The IMO Ontario; #2          Brian Hogue; NPCC;#2          Guy Zito; NPCC;#2          Greg Campoli; NYISO; #2          James Castle; NYISO ;#2          John Ravalli; NYISO; #2          Karl Tammar; NYISO; #2          Robert Waldele; NYISO; #2          Michael Calimano; NYISO; #2</p>	<p>periodically, once every 30 minutes or lesser as applicable in order to capture the allowable lesser duration Tvs.</p> <p>3. General comment on the standard is it seems overly burdensome with documentation and less focused on performance.</p> <p>4. Examples regarding the individual definitions might be helpful to be added in an accompanying document.</p> <p>5. The Standard should address repeated, planned IROL violations that don't exceed or consistently approach Tv and preventing this/discouraging this mode of operation from reoccurring. It is not OK to exceed IROLs and there are entities that frequently exceed them for short periods of time for economic or other reasons, they are not reportable because they do not exceed Tv. This behavior must be discouraged through measurement of frequency and severity of IROL through the reporting mechanisms outlined in this standard, and as outlined in new template P2 T1 "System Operating/IROL Violations". In addition, there were no IROL Tv violations reported to NERC as a result of the events occurring on August 14th 2003 which implies either more stringent reporting is required or the IROL and Tv limit needs to be reevaluated.</p>
<p>1. The footnote was added at the request of many industry commenters and has been modified to reference the specific requirement in standard 600. Since the requirement to identify IROLs was transferred to the Determine Facility Ratings Standard, the footnote is not in the revised standard.</p> <p>2. The frequency of real-time assessments was not intended to be tied to T<sub>v</sub>.</p> <p>This standard does not preclude an RA from conducting a real-time assessment more frequently than once every 30 minutes.</p> <p>Some IROLs may have a very short T<sub>v</sub> - T<sub>v</sub> could be as short as a minute or less – and requiring a real-time assessment to be conducted this frequently would not be practical.</p> <p>3. Please be more specific about which aspects you feel are burdensome.</p> <p>4. Please be more specific about what examples you feel should be added.</p> <p>5. While entities do exceed SOL's, there is little evidence to support the statement that entities routinely exceed IROLs. If an entity is aware of an RA that allows IROLs to be routinely exceeded, the Compliance Monitor should be notified so that an investigation can be conducted.</p> <p>The revised standard requires more coordination with adjacent RAs, and this should help put better controls over the amount of risk tolerated.</p> <p>There were many different violations that occurred on August 14.</p>	
<p>Kathleen Goodman; ISO-NE; #2</p>	<p>1. The standard seems to be measured more on documentation than performance. Our concern is that the requirements to document may delay action and response time, therefore adversely impacting reliability. The standard should focus on performance and not whether every log entry was made in the correct format.</p>



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	<p>2. The standard should be reviewed to ensure that all references to IROLs include the word “operating” if the definition will move forward as IROL vs. IRL (note that Attachment A to NERC’s recommendation 1 from August 14th uses IRL, not IROL). Consistency needs to be applied.</p> <p>3. The Phased-in implementation in 200 does not make sense: if the data is not obtained for 12 months, how can the monitoring, actions, etc. begin in six months?</p> <p>4. While ISO New England generally agrees with a quick implementation of the final approved Standard, there is a large amount of specific data that must be collected and stored to meet the full intent of the Standard. Depending upon what the final approved Standard is, this may require additional software and business processes to fully implement. For this reason we believe that an implementation plan must provide a development period for the responsible entities to fully implement the standard.</p> <p>5. There is an issue with the concept of a monetary sanction matrix and what its implications are. ISO-NE, as well as NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement “Plan B,” a “voluntary” approach affording NERC the authority to perform these types of monetary sanctions. ISO-NE has indicated that any posted Standard, with such a matrix, will not be supported by ISO-NE. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and ISO-NE will continue to work to oppose monetary sanctions.</p> <p>6. ISO New England believes that this standard should provide clear examples within this standard, describing in detail what constitutes a violation that must be reported along with clear examples of what constitutes and SOL and IROL. Examples should include contingency pair examples for both IROL and SOL thermal limits as well as examples concerning stability and voltage limits.</p>
<p>1. Please be more specific in identifying areas where you feel the documentation required is inappropriate. The SDT does not believe that the documentation requirements in this standard are more involved than what should be currently documented.</p> <p>2. The SDT did not write the NERC’s recommendations on the August 14<sup>th</sup> events.</p> <p>3. The standard assumes that the RA functions are already being performed by some entity, and some entity is already monitoring and collecting data. The reason the SDT suggested a longer implementation</p>	

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<p>time for compliance with the data spec requirement was to recognize that some entities may need some time to formalize their data specifications.</p> <p>4. The standard assumes that the RA functions are already being performed by some entity, and some entity is already monitoring and collecting data. Additional time has been allowed for creating specifications – the standard doesn't require any software or business processes that aren't already required to meet current Operating Policies.</p> <p>5. The SDT has no authority to remove financial sanctions from the Sanctions Table.</p> <p>6. The format of the new standards, approved with the Reliability Standards Process Manual, requires very clear, succinct topical sections. Please reference the RSPM pages ---- to see what is required. The VP-General Counsel for NERC has advised the SDT's to refrain from adding material to the standards that exceeds the topics identified in the RSPM.</p>	
<p>Ralph Rufrano; NYPA; #1                  David Kiguel; Hydro One Networks Inc.; #1                  Roger Champagne; H-Q TransÉnergie; #1                  Greg Campoli; New York ISO (NYISO); #2                  Peter Lebro; National Grid; #1                  Kathleen Goodman; ISO-NE; #2                  Dan Stosick; ISO-NE;#2                  Al Adamson; NYSRC;#2                  Khagan Khan; The IMO Ontario; #2                  Brian Hogue; NPCC;#2                  Guy Zito; NPCC;#2</p>	<p>(NPCC Members of CP9 expressed concern over these questions 18-19-and 20. The answers to them are more "process" related than standard related and seem inappropriate. Are differing weights assigned to persons, and their answers, who are not voting in the pool? These questions could raise issues about the process being open and inclusive.)</p>
<p>The intent of asking these questions was to see if there were enough industry balloters who would oppose any standard based on issues outside the SDT's control so that the SDT could decide whether to delay balloting until these issues (i.e. the future of the Reliability Coordinator, the difference between the RC and the RA, financial sanctions, field testing) are resolved.</p>	
<p>Al Corbet; TVA                  Jerry Landers; TVA                  Jennifer Weber; TVA                  Edd Forsythe; TVA                  Larry Goins; TVA                  Mark Creech; TVA                  Kathy Davis; TVA</p>	<p>TVA would like to reserve the right to forward additional comments at a later date.</p>
<p>Jalal Babik; Dominion VA Power; #1                  Craig Crider; Dominion VA Power; #1                  Jack Kerr; Dominion VA Power; #1                  Bill Thompson; Dominion VA Power; #1</p>	<p>The Board approved a new compliance template that applies to the issues covered by this proposed standard on April 2, 2004. The compliance template that is now approved conflicts with the compliance presented here. I want to know where this is heading. Also see comments under item 9.</p>
<p>The SDT understands that the compliance templates were short-term 'fixes' to provide FERC and the industry with a set of 'measurable' elements needed to support reliability. These templates did not go through the same level of 'due process' required by the ANSI accredited NERC Reliability Standards Development Process and were not intended to supersede these new standards. When this standard is approved, adopted, and implemented, the associated compliance templates will be retired. When the NERC BOT approved the templates, the BOT also directed that the SDT's continue to develop the new</p>	

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reliability standards, following the ANSI process.

See response under question 9.

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<p>Dan Boezio; AEP; #1                  Ron Ciesiel; SPP; #2                  Bob Cochran; SPS; #1                  Mike Gammon; KCP&amp;L; #1                  Allen Klassen; Westar; #1                  Peter Kuebeck; OG&amp;E; #1                  Mike Stafford; GRDA; #1                  Robert Rhodes; SPP; #2                  Scott Moore; AEP; #1</p>	<p>1. An IROL of 300 MW of load loss is too small. Don't lose sight of the fact that an IROL is a significant threat to a large portion of the interconnection. By minimizing the defined threshold for an IROL, the number of IROLs will increase drastically and thereby dilute the significance of the event.</p> <p>2. Section 203(b)(1)(ii) requires a real-time assessment at least every 30 minutes. This may be too frequent depending upon the complexity of the studies involved.</p> <p>3. Consider reversing noncompliance Levels 3 and 4 in section 203(e). Which of the two levels is worse?</p>
<p>1. Agreed. The SDT modified the standard to respect this concept.</p> <p>2. The industry was asked to identify whether 30 minutes was appropriate, and there was consensus on requiring that these be conducted at least once every 30 minutes. This is an assessment, and not necessarily a 'study'.</p> <p>3. The SDT modified these levels of non-compliance to clarify what was intended. As revised, it should be clear that level 4 is worse than level 3.</p>	
<p>Alan Gale; City of Tallahassee; #5                  Rusty Foster; City of Tallahassee; #3</p>	<p>1. The Compliance Monitoring Process for 202-208 requires that certain information be provided to the Compliance Monitor "upon request". There should be some consistency across all the standards for time frames of "requested data". Without it, the Compliance Monitor can get the run around for a month and the reporting entity can still be compliant.</p> <p>203</p> <p>2. Requirements and Measures - Although not specified in the Requirements, the Measures requires an Operational Planning Analysis at least once each day for the "projected system operating conditions". This would preclude a "day ahead" analysis of the weekend (or holiday) from being performed on Friday. A provision should be made that would allow this. Trigger a required analysis if system conditions differed from the analyzed conditions. (i.e. a line was planned to be out Saturday only, but remains out on Sunday would trigger a new analysis. If the line was back in, it would not require an analysis be done on Saturday for Sunday, the analysis on Friday would remain valid.)</p> <p>204</p> <p>Requirements</p> <p>3. Who is responsible for implementing an IROL mitigation plan? Transmission Owner? RA? Does the RA develop the plan or the Transmission Owner?</p> <p>4. Footnote 2 indicates the no action "may be acceptable as long as it is documented", what type of documentation is required?</p> <p>5. If "no overt action" is acceptable, is it an IROL?</p> <p>205</p> <p>6. Measure (3)(i) should be revised to indicate that the Compliance Monitor should be notified within five business days of determining the data issue could not be resolved.</p> <p>7. Non-compliance levels – Why is there a Level 1 and Level 2, rather than Level 3 and Level 4. It appears that this information is very important to maintain a reliable system. In additions, if there is a measure for notifying the Compliance Monitor when data issues cannot be resolved, a level of non-compliance should be included when this notification is not provided.</p>

**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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	<p>206</p> <p>8. Non-Compliance Level 4 - Should be revised to separate “not providing the data” from the “inability to resolve the issue”. The inability to send the data due to a technical problem that is being upgraded should be differentiated from the refusal to provide the data (“inability to resolve”). This will allow a lower level of non-compliance while pursuing any necessary equipment or technology upgrades.</p> <p>207</p> <p>9. Requirements and Levels of Non-Compliance – from this it appears that the Reliability Authority will work with other entities to develop processes, procedures, and plans, but the levels of non-compliance indicated that these activities could be developed with no input. What good is this if an Reliability Authority can’t perform the mitigation? Seems very broad and burdensome to the Reliability Authority.</p> <p>10. There should be some consistency across all the standards for time frames of “reviewing or updating”. Without it, an entity can only review its documents and programs “at will” and still be compliant</p> <p>208</p> <p>11. Requirements - The standard does not address seams issues. Although 201 requires Reliability Authorities that share facilities to develop IROL procedures and lists, there needs to be a requirement included that would allow one Reliability Authority to give directives to another Reliability Authority.</p> <p>12. Levels of Non-Compliance – If an entity does not follow the Reliability Authority directive, and the Reliability Authority does not have the ability to take action, other than the financial penalty there is no way to make entities comply with directives and reliability will be jeopardized.</p>
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**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

1. The term, "on request" was intended to mean during an audit. The standard has been changed to indicate this more clearly.
2. The standard doesn't specify how detailed each of these analyses and assessments needs to be – but they should be done to verify the expected conditions – the operational analysis should be done at least once a day – and the real-time assessment should be done at least once every 30 minutes.  
The operational planning analysis does not need to include a stability analysis unless – whether or not a stability analysis should be conducted is left up to the RA. It would be unrealistic to expect the RA to conduct a stability study each day, and this is not what was intended.
3. The RA is responsible for having the processes, procedures or plans and for implementing them. The standard is silent on who needs to develop the plan. Currently, at least one of the regions has a technical committee that develops some of these documents for use in a sub-region or region-wide basis.
4. The documentation in footnote 2 is the operator log or other data source addressed in measure 204(b)(1)(i).
5. If an RA sees that a planned action, such as the addition of another unit, is scheduled to occur, and the addition of the unit will reduce loading on a line that is approaching its IROL, the RA may elect to take 'no action' because the RA knows that if all goes as planned, the limit won't be exceeded. – but the IROL would still be an IROL.
6. Your suggestion was implemented and is reflected in the revised standard.
7. The SDT could not identify a method for determining that data hadn't been provided and the Compliance Monitor hadn't been notified.
8. The standard allows the RA the flexibility of determining when the issue needs the intervention of the Compliance Monitor. It also allows for alternative methods for collecting data.
9. If the processes, procedures or plans are developed without coordination with entities that are required to take actions, then the RA is non-compliant. The RA needs to ensure that the entities that are expected to take actions under specified conditions (with respect to IROLs) are aware, in advance, of the conditions and the actions that need to be taken.
10. Since the new standards are being developed in parallel, and the importance of requirements are not equal from standard to standard, mandating that all standards contain the same review periods doesn't seem practical – and implementing such a system is outside the control of the SDT.
11. Under the Functional Model, all RAs are created equal. Developing a requirement that gives one RA the authority to direct the actions of another RA is outside the scope of the Functional Model. However, under the processes, procedures and plans, there may be documents that outline a process agreed upon by all involved RAs.  
There is another standard, Coordinate Operations between RAs that addresses the more complex coordination that takes place between RAs in support of interconnection reliability. This standard's focus is on the actions the RA takes to control its own RA Area with respect to monitoring and operating so that no IROLs are exceeded. The SDT modified Requirement 201 to better address the seams issues when establishing which Facilities are subject to IROLs, and when establishing IROLs for those Facilities.
12. Agreed. Financial sanctions are intended to provide incentive to follow the RA's directives. If an entity doesn't take the actions requested, the RA needs to be ready to direct other actions to protect the reliability of the interconnection - up to and including issuing a directive to drop firm load. The RA needs to have the authority to issue directives and have those directives followed. Each RA may have agreements with entities under its direction that include language that addresses the 'passing on' of any financial sanctions due to lack of compliance with the RAs directives. Ensuring reliability is the RA's objective.

Gerald Rheault; Manitoba Hydro; #1,3,5,6	1. Manitoba Hydro believes that this Standard should be field tested prior to implementation. This will ensure that all elements of the Standards are relevant to the operational reliability of the bulk
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**Consideration of Comments on 4<sup>th</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

	<p>electric system and can be implemented in a straightforward manner.</p> <p>2. In section 203 (d) Compliance Monitoring Process item (3) (i) it makes more sense that the RA provide evidence that Operational Planning Analysis occurs at least once a day and what the results were rather than indicating only the most recent analysis. Similar comments for 203 (d) (3) (iii). The evidence could be in the form of a log.</p> <p>3. In section 205 (b) Measures, there is no measure to establish that the RA is notifying its Compliance Monitor when data is not provided or data collection issues are not resolved.</p> <p>In section 205 (d) Compliance Monitoring Process, there is no check that the RA is notifying its Compliance Monitor when data is not provided or data collection issues are not resolved. There are no sanctions for not complying.</p>
<p>1. The determination of whether field testing is needed is made by the SAC in consultation with the VP-Director-Compliance. The SDT does not have any authority over whether field testing is conducted.</p> <p>2. The SDT asked the industry for support of the compliance monitoring, and most industry commenters indicated they do support the language in the standard, so this was not changed.</p> <p>3. Agreed – the SDT couldn't identify a way to measure non-compliance with this requirement, but the requirement is needed to 'trigger' an investigation by the Compliance Monitor to motivate whatever entity is not providing the necessary data.</p>	
<p>Lee Xanthakos; SCE&amp;G; #1</p>	<p>I agree with the requirements of RAs as defined by this standard as long as my organization becomes an RA. If we cannot receive RA certification then I would not agree with the requirement because state regulatory issues do not allow my organization to transfer to someone else the RA responsibility defined here that we currently do.</p>
<p>The SDT has no control over which entity will/will not become an RA. We do appreciate the many comments you provided on this standard.</p>	

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**Real-Time Data:** Real-Time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

**A. Introduction**

1. **Title:** **Monitoring the Wide Area**
2. **Number:** **IRO-007-1**
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is continuously monitored.
4. **Applicability**
  - 4.1. Reliability Authority
5. **Effective Date:** Three months after Board of Trustee Adoption

**B. Requirements**

- R1. The Reliability Authority shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).
- R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Authorities who monitor that Facility (or group of Facilities) shall use the most conservative of the values under consideration.

**C. Measures**

- M1. The Reliability Authority shall have IROLs available for its System Operators.
  - M1.1 These limits shall include those that are associated with Facilities (or groups of Facilities) in the Wide Area monitored by the Reliability Authority.
- M2. The Reliability Authority shall have Real-Time Data available in a form that its System Operators can compare to the IROLs.
  - M2.1 The data shall be for the Reliability Authority's Area and from the other Reliability Authority Areas.
- M3. The Reliability Authority shall monitor system operating parameters in its Wide Area and shall compare these operating parameters against their associated IROLs.
  - M3.1 For IROLs without agreed-upon limits, the Reliability Authority shall have evidence it operated to the most conservative of the values under consideration.

**D. Compliance**

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Timeframe**

The Performance-Reset Period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The Reliability Authority shall keep data on limits for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Reliability Authority shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Authority shall demonstrate the following to its Compliance Monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:

- 1.4.1** Its System Operators actively monitoring and comparing Real-Time system operating parameters associated with IROLs.

**2. Levels of Non-Compliance**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Not applicable.

**2.3. Level 3:** Not applicable.

**2.4. Level 4:** A level four noncompliance occurs if either of the following conditions are present:

- 2.4.1** System operating parameters not monitored in Real-Time and compared against IROLs.

- 2.4.2** There was a disagreement on the IROL and the most conservative limit under consideration was not used.

**E. Regional Differences**

- 1.** None identified.

**Version History**

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

**A. Introduction**

1. **Title:** **Reliability Authority Operational Analyses and Real-Time Assessments**
2. **Number:** **IRO-008-1**
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Authority
5. **Effective Date:** Three months after Board of Trustee Adoption.

**B. Requirements**

- R1. The Reliability Authority shall perform Operational Planning Analyses to assess whether the planned operations within its Wide Area, including other Reliability Authority Areas, will exceed any of its Interconnection Reliability Operating Limits (IROLs).
- R2. The Reliability Authority shall perform Real-Time Assessments every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs.
- R3. When the results of the Reliability Authority's Operational Planning Analyses or Real-Time Assessments indicate the need for specific operational actions to prevent or mitigate instances of exceeding IROLs, the Reliability Authority shall share its results with those entities that are expected to take those actions.

**C. Measures**

- M1. The Reliability Authority shall be able to identify operating situations or events that impact its Reliability Authority Area's ability to operate without exceeding any IROLs as a result of the following.
  - M1.1 The Reliability Authority shall have conducted an Operational Planning Analysis at least once each day, evaluating the next day's projected system operating conditions.
  - M1.2 The Reliability Authority shall have conducted a Real-Time Assessment periodically, but at least once every 30 minutes.
- M2. The Reliability Authority shall be able to show evidence that it shared the results of its Operational Planning Analyses and Real-Time Assessments with those entities expected to take actions based on that information. Evidence can be an operating log, voice recorder, fax, or other type of record.

**D. Compliance**

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Timeframe**

The Performance-Reset Period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Reliability Authority shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, and investigations upon complaint, to assess performance.

The Reliability Authority shall identify the following to its Compliance Monitor to inspect as part of a scheduled on-site review or as part of an investigation upon complaint:

- 1.4.1** The time the most recent Operational Planning Analysis was conducted.
- 1.4.2** Whether the planned operations within the Reliability Authority’s Reliability Authority Area may exceed any of its IROLs.
- 1.4.3** The time the most recent Real-Time Assessment was conducted.
- 1.4.4** Whether the Real-Time Assessment identified if its Reliability Authority Area is exceeding any IROLs or is expected to exceed any IROLs.

**2. Levels of Non-Compliance**

- 2.1. Level 1:** Not applicable.
- 2.2. Level 2:** Not applicable.
- 2.3. Level 3:** A level three noncompliance exists if Operational Planning Analyses and Real-Time Assessments were conducted but not as frequently as required.
- 2.4. Level 4:** A level four noncompliance exists if the Reliability Authority could not identify whether the planned operations within its Reliability Authority Area were expected to exceed any of its IROLs.

**E. Regional Differences**

- 1. None identified.

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**Interconnection Reliability Operating Limit Event:** Any instance of exceeding an Interconnection Reliability Operating Limit for a minimum of 30 continuous seconds.

**Interconnection Reliability Operating Limit Event Duration:** The length of time an Interconnection Reliability Operating Limit is exceeded. The duration is measured from the point in time where the limit is first exceeded for at least 30 continuous seconds and ends at the beginning of the continuous 30 seconds in which the value returns to within the Interconnection Reliability Operating Limit.

**Occurrence Period:** The time period in which performance is measured and evaluated.

**A. Introduction**

1. **Title:** **Reliability Authority Actions to Operate Within IROLs**
2. **Number:** **IRO-009-1**
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding IROLs.
4. **Applicability**
  - 4.1. Reliability Authority
5. **Effective Date:** Three months after Board of Trustee Adoption.

**B. Requirements**

- R1. The Reliability Authority shall, without delay, act or direct others to act to:
  - R1.1. Prevent instances of exceeding Interconnection Reliability Operating Limits (IROLs).
  - R1.2. Mitigate the magnitude and duration of instances of exceeding IROLs.
  - R1.3. The Reliability Authority shall include a statement in each IROL-related directive to inform the recipient that the directive is related to an IROL.
  - R1.4. The Reliability Authority shall document each instance of exceeding an IROL and shall document and complete an IROL Violation Report for each instance of exceeding an IROL for time greater than that limit's  $T_v$ . The Reliability Authority shall file each IROL Violation Report with its Compliance Monitor within five business days of the initiation of the event.
- R2. If the Reliability Authority directs a modification to an Implemented Interchange, the Reliability Authority shall direct the Interchange Authority to update the Arranged Interchange.

**C. Measures**

- M1. The Reliability Authority shall have documentation to support each instance where actions were taken or directives were issued to mitigate the magnitude and duration of exceeding an IROL.
- M2. The documentation shall include the date and time of the event, actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)
- M3. The duration of the event shall be measured from the point when the limit is exceeded for a minimum of thirty seconds to the point when the system has returned to a state that is within the IROL for a minimum of thirty seconds.
- M4. The Reliability Authority shall have a completed IROL Violation Report for each instance where it exceeded an IROL for time greater than that limit's  $T_v$ .
- M5. The IROL Violation Report shall include the date and time of the event, identification of which IROL was violated and the  $T_v$  for that limit, magnitude, and duration of exceeding the IROL, actions taken or directives issued and the time these were initiated or issued, and an explanation of results of those actions or directives.

**M5.1** The Reliability Authority shall have evidence it filed a completed IROL Violation Report with its Compliance Monitor within five business days of the initiation of the IROL event.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization

**1.2. Compliance Monitoring Period and Reset Timeframe**

The Performance-Reset Period shall be 12 months from the last violation.

**1.3. Data Retention**

The Reliability Authority shall keep IROL Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Reliability Authority shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within five days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances.

**1.4.2** IROL Violation Reports.

**2. Levels of Non-Compliance**

**2.1. Level 1:** IROL exceeded for a time less than or equal to  $T_v$  and no documentation to indicate actions taken or directives issued to mitigate the instance.

**2.2. Level 2:** Not applicable.

**2.3. Level 3:** Not applicable.

**2.4. Level 4:** IROL exceeded for time greater than  $T_v$ .

**E. Regional Differences**

1. None identified.

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*None introduced in this standard.*

**A. Introduction**

1. **Title:** **Reliability Authority Data Specification and Collection**
2. **Number:** **IRO-010-1**
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Authority has the data it needs to monitor and assess the operation of its Reliability Authority Area.
4. **Applicability**
  - 4.1. Reliability Authority
5. **Effective Date:** Three months after Board of Trustee Adoption.

**B. Requirements**

- R1. The Reliability Authority shall specify and collect the data and information it needs to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments conducted relative to operating within its Reliability Authority Area's Interconnection Reliability Operating Limits. The Reliability Authority shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Authority, and from entities that provide Real-Time Facility status to the Reliability Authority. This includes specifying and collecting data from the following:
  - R1.1. Balancing Authorities
  - R1.2. Generator Owners
  - R1.3. Generator Operators
  - R1.4. Interchange Authority
  - R1.5. Load-Serving Entities
  - R1.6. Reliability Authorities
  - R1.7. Transmission Operators
  - R1.8. Transmission Owners
- R2. The Reliability Authority shall specify when to supply data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
- R3. The Reliability Authority shall notify its Compliance Monitor (within five business days of being unable to resolve the issue) when both of the following conditions are present:
  - R3.1. An entity that has data needed to support Real-Time Monitoring, Operational Planning, or Real-Time Assessments relative to operating within the Reliability Authority's Reliability Authority Area has not provided data as specified, and
  - R3.2. The Reliability Authority was unable to resolve the issue with the entity responsible for providing the data.

**C. Measures**

- M1. The Reliability Authority shall have a documented specification for data needed to build and maintain models needed to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments relative to Interconnection Reliability Operating Limits.

- M1.1** Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.
- M1.2** Specification shall address the data provision process to use when automated Real-Time system operating data is unavailable.
- M2.** The Reliability Authority shall have evidence that it has distributed its data specification to entities that have Facilities monitored by the Reliability Authority and to entities that provide Facility status to the Reliability Authority.
- M3.** The Reliability Authority shall have evidence it notified its Compliance Monitor when an entity that has Facilities monitored by the Reliability Authority, or an entity that provides Facility status to the Reliability Authority, does not provide data as specified, and the Reliability Authority was unable to resolve the issue with the entity responsible for providing the data.
  - M3.1** If the Reliability Authority does not receive data as specified, and is unable to resolve the situation, then the Reliability Authority shall notify its Compliance Monitor within five business days of discovering that the issue of the missing data could not be resolved.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization

#### **1.2. Compliance Monitoring Period and Reset Timeframe**

The Performance-Reset Period shall be 12 months from the last violation.

#### **1.3. Data Retention**

The Reliability Authority shall keep its data specification(s) for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

#### **1.4. Additional Compliance Information**

The Reliability Authority shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

Text The Reliability Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within five days of a request as part of an investigation upon complaint:

**1.4.1** Data specification(s).

**1.4.2** Proof of distribution of the data specification(s).

### **2. Levels of Non-Compliance**

**2.1. Level 1:** Data specification incomplete (missing either the list of required data, a mutually agreeable format, a timeframe for providing data, or a data provision process to use when automated Real-Time system operating data is unavailable).

**2.2. Level 2:** No data specification or the specification not distributed to the entities that have Facilities monitored by the Reliability Authority and the entities that provide the Reliability Authority with Facility status.



2.3. **Level 3:** Not applicable.

2.4. **Level 4:** Not applicable.

**E. Regional Differences**

1. None identified.

**Version History**

Version	Date	Action	Change Tracking
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**Standard Development Roadmap**

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**Development Steps Completed:**

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7. Drafting Team posts Drafts for comment (March 1–April 14, 2004).

**Description of Current Draft:**

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**Future Development Plan:**

**Anticipated Actions**

1. Post for 45 day comment period.
2. Post for 30-day pre-ballot period.
3. First ballot of Version 0 standards.
4. Recirculation ballot of Version 0 standards.
5. 30-day posting before board adoption.
6. Board adopts Version 0 standards.
7. Effective date.

**Anticipated Date**

- To be determined
- To be determined
- To be determined
- To be determined
- To be determined
- To be determined
- To be determined

**DEFINITIONS OF TERMS USED IN STANDARD**

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*None introduced in this standard.*

**A. Introduction**

- 1. Title:** **Providing Reliability–Related Data to the Reliability Authority**
- 2. Number:** **IRO-011-1**
- 3. Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Authority has the data it needs to monitor and assess the operation of its Reliability Authority Area.
- 4. Applicability**
  - 4.1.** Balancing Authority
  - 4.2.** Generator Owner
  - 4.3.** Generator Operator
  - 4.4.** Interchange Authority
  - 4.5.** Load-Serving Entity
  - 4.6.** Reliability Authority
  - 4.7.** Transmission Operator
  - 4.8.** Transmission Owner
- 5. Effective Date:** Three months after Board of Trustee Adoption.

**B. Requirements**

- R1.** Each entity performing one of the following functions shall provide data, and information, as specified, to the Reliability Authority(ies) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Authority to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments conducted relative to operating within its Reliability Authority Area’s Interconnection Reliability Operating Limits.
  - R1.1.** Balancing Authority
  - R1.2.** Generator Owner
  - R1.3.** Generator Operator
  - R1.4.** Interchange Authority
  - R1.5.** Load-serving Entity
  - R1.6.** Reliability Authority
  - R1.7.** Transmission Operator
  - R1.8.** Transmission Owner

**C. Measures**

- M1.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Authority, Transmission Operator, and Transmission Owner shall each have the following:
  - M1.1** Evidence that it provided data and information, as specified, to the requesting Reliability Authority, within the timeframe specified, in the mutually agreed upon format, or
  - M1.2** Evidence that it committed to providing the data identified in the specification.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization

**1.2. Compliance Monitoring Period and Reset Timeframe**

The Performance-reset Period is 12 months from the last violation.

**1.3. Data Retention**

The responsible entity shall keep data transmittal documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-Serving Entity, Reliability Authority, Transmission Operator, and Transmission Owner (Responsible Entity) shall each demonstrate compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Responsible Entity shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within five days of a request as part of an investigation upon complaint:

**1.4.1** Evidence indicating data was sent to the Reliability Authority or evidence that the Responsible Entity committed to providing the data identified in the specification.

**2. Levels of Non-Compliance**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Not applicable.

**2.3. Level 3:** Not applicable.

**2.4. Level 4:** Data was not provided to the Reliability Authority as specified and the situation was not resolved with the Reliability Authority.

**E. Regional Differences**

1. None identified.

**Version History**

Version	Date	Action	Change Tracking
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### **Standard Development Roadmap**

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#### **Development Steps Completed:**

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#### **Future Development Plan:**

##### **Anticipated Actions**

1. Post for 45-day comment period.
2. Post for 30-day pre-ballot period.
3. First ballot of Version 0 standards.
4. Recirculation ballot of Version 0 standards.
5. 30-day posting before board adoption.
6. Board adopts Version 0 standards.
7. Effective date.

##### **Anticipated Date**

To be determined  
To be determined  
To be determined  
To be determined  
To be determined  
To be determined  
To be determined

**DEFINITIONS OF TERMS USED IN STANDARD**

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*None introduced in this standard.*

## A. Introduction

1. **Title:** Reliability Authority Processes, Procedures, or Plans for Preventing and Mitigating Interconnection Reliability Operating Limits
2. **Number:** IRO-012-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that there are processes, procedures or plans for foreseeable instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Authority
5. **Effective Date:** Three months after Board of Trustee Adoption.

## B. Requirements

- R1. The Reliability Authority shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention and mitigation of instances of exceeding its IROLs.

## C. Measures

- M1. The Reliability Authority shall have one or more documented Operating Processes, Procedures, or Plans that address both preventing and mitigating instances of exceeding IROLs. There shall be evidence that the Reliability Authority coordinated the development of these Operating Procedures, Processes or Plans with those entities responsible for taking actions and with those entities impacted by such actions.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Timeframe

The Performance-Reset Period is 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Authority shall keep its action plan for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Authority shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Authority shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within five days of a request as part of an investigation upon complaint.

- 1.4.1 Processes, procedures, or plans that address preventing and mitigating instances of exceeding IROLs.



**2. Levels of Non-Compliance**

- 2.1. Level 1:** Operating Processes, Procedures, or Plans for both preventing and mitigating instances of exceeding IROs exist, but these documents weren't coordinated with all involved and impacted entities.
- 2.2. Level 2:** Operating Processes, Procedures, or Plans for both preventing and mitigating instances of exceeding IROs exist, but these documents weren't coordinated with any involved or any impacted entities.
- 2.3. Level 3:** Operating Processes, Procedures, or Plans exist but do not address both preventing and mitigating instances of exceeding IROs.
- 2.4. Level 4:** No Operating Processes, Procedures, or Plans exist addressing preventing and mitigating instances of exceeding IROs.

**E. Regional Differences**

- 1. None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
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**Standard Development Roadmap**

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**Future Development Plan:**

**Anticipated Actions**

1. Post for 45-day comment period.
2. Post for 30-day pre-ballot period.
3. First ballot of Version 0 standards.
4. Recirculation ballot of Version 0 standards.
5. 30-day posting before board adoption.
6. Board adopts Version 0 standards.
7. Effective date.

**Anticipated Date**

- To be determined
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- To be determined
- To be determined
- To be determined
- To be determined
- To be determined

**DEFINITIONS OF TERMS USED IN STANDARD**

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*None introduced in this standard.*

**A. Introduction**

- 1. Title:** Reliability Authority Directives Relative to Interconnection Reliability Operating Limits
- 2. Number:** IRO-013-1
- 3. Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Reliability Authority's directives are followed.
- 4. Applicability**
  - 4.1.** Balancing Authority
  - 4.2.** Interchange Authority
  - 4.3.** Transmission Operator
- 5. Effective Date:** Three months after Board of Trustee Adoption.

**B. Requirements**

- R1.** The Balancing Authority, Interchange Authority, and Transmission Operator shall each follow its Reliability Authority's directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances, the Balancing Authority, Interchange Authority, or Transmission Operator shall immediately inform the Reliability Authority of its inability to perform the directive so that the Reliability Authority can implement alternate remedial actions. The directives covered by this requirement shall be those that:
  - R1.1.** Prevent instances of exceeding Interconnection Reliability Operating Limits (IROLs).
  - R1.2.** Mitigate the magnitude and duration of instances of exceeding IROLs.
- R2.** The Balancing Authority, Interchange Authority, and Transmission Operator shall notify its Reliability Authority when the actions associated with a directive have been completed.
  - R2.1.** The Balancing Authority, Interchange Authority, and Transmission Operator shall each document the Reliability Authority's directives and its actions taken.

**C. Measures**

- M1.** The Responsible Entity shall have the following documentation in an operations log or other data source(s), to show that it followed each directive it received relative to an IROL:
  - M1.1** Date and time of each Reliability Authority directive received.
  - M1.2** Directive issued by the Reliability Authority.
  - M1.3** Actions taken in response to the Reliability Authority's directive.

**D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization
  - 1.2. Compliance Monitoring Period and Reset Timeframe**

The Performance-Reset Period is 12 months from the last violation.

**1.3. Data Retention**

The Balancing Authority, Interchange Authority, and Transmission Operator shall keep its documentation for three calendar years. The Compliance Monitor shall keep audit records for three calendar years.

**1.4. Additional Compliance Information**

The Balancing Authority, Interchange Authority, and Transmission Operator shall each demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint to assess performance.

The Balancing Authority, Interchange Authority, and Transmission Operator shall each make the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within five days of a request as part of an investigation upon complaint:

**1.4.1** Operations log or other data source(s) to show the following for each instance of being issued a Reliability Authority directive relative to an IROL:

**1.4.1.1** Date and time of each Reliability Authority directive received.

**1.4.1.2** Directive issued by the Reliability Authority.

**1.4.1.3** Actions taken in response to Reliability Authority’s directive.

**2. Levels of Non-Compliance**

**2.1. Level 1:** The Reliability Authority’s directives relative to preventing or mitigating instances of exceeding IROLs were followed but the documentation did not include the date and time of each directive received, the directive received, the actions taken, in response to the directive.

**2.2. Level 2:** Not applicable.

**2.3. Level 3:** Not applicable.

**2.4. Level 4:** Did not follow the Reliability Authority’s directives.

**E. Regional Differences**

1. None identified.

**Version History**

Version	Date	Action	Change Tracking
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**Standard Development Roadmap**

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**Description of Current Draft:**

This informational draft reflects the Standard Authorization Committee’s directive to change the ‘reliability authority’ to the ‘reliability coordinator’. The drafting team is not soliciting comments during this posting.

**Future Development Plan:**

<b>Anticipated Actions</b>	<b>Anticipated Date</b>
1. Post revised Implementation Plan and recommendations for Version 0 revisions/retirements for 45 day comment period.	To be determined
2. Post for 30-day pre-ballot period.	To be determined
3. First ballot of Version 0 standards.	To be determined
4. Recirculation ballot of Version 0 standards.	To be determined
5. 30-day posting before board adoption.	To be determined
6. Board adopts Version 0 standards.	To be determined
7. Effective date.	To be determined

## DEFINITIONS OF TERMS USED IN STANDARD

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**Real-Time Data:** Real-time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., interconnection control area communication protocol or SCADA data), and manually collected data.

**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

## A. Introduction

1. **Title:** **Monitoring the Wide Area**
2. **Number:** IRO-007-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the bulk electric system is continuously monitored.
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** Three months after Board of Trustee Adoption

## B. Requirements

- R1. The reliability coordinator shall perform real-time monitoring of system operating parameters within its wide area to determine if operating parameters are within their associated interconnection reliability operating limits (IROLs).
- R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all reliability coordinators who monitor that Facility (or group of facilities) shall use the most conservative of the values under consideration.

## C. Measures

- M1. The reliability coordinator shall have IROLs available for its system operators.
  - M1.1 These limits shall include those that are associated with facilities (or groups of facilities) in the wide area monitored by the reliability coordinator.
- M2. The reliability coordinator shall have real-time data available in a form that its system operators can compare to the IROLs.
  - M2.1 The data shall be for the reliability coordinator's area and from the other reliability coordinator areas.
- M3. The reliability coordinator shall monitor system operating parameters in its wide area and shall compare these operating parameters against their associated IROLs.
  - M3.1 For IROLs without agreed-upon limits, the reliability coordinator shall have evidence it operated to the most conservative of the values under consideration.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Timeframe**

The performance-reset period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The reliability coordinator shall keep data on limits for three calendar years. The Compliance monitor shall keep audited data for three calendar years.
  - 1.4. **Additional Compliance Information**



The reliability coordinator shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The reliability coordinator shall demonstrate the following to its compliance monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:

**1.4.1** Its system operators actively monitor and compare real-time system operating parameters associated with IROLs.

**2. Levels of Non-Compliance**

**2.1. Level 1:** Not Applicable

**2.2. Level 2:** Not Applicable

**2.3. Level 3:** Not Applicable

**2.4. Level 4:** A level four noncompliance occurs if either of the following conditions are present:

**2.4.1** System operating parameters not monitored in real-time and compared against IROLs.

**2.4.2** There was a disagreement on the IROL and the most conservative limit under consideration was not used.

**E. Regional Differences**

None identified

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
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## Standard Development Roadmap

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### Description of Current Draft:

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### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

- |  |                  |
|--|------------------|
| 1. Post revised Implementation Plan and recommendations for Version 0 revisions/retirements for 45 day comment period. | To be determined |
| 2. Post for 30-day pre-ballot period.  | To be determined |
| 3. First ballot of Version 0 standards.  | To be determined |
| 4. Recirculation ballot of Version 0 standards.  | To be determined |
| 5. 30-day posting before board adoption.   | To be determined |
| 6. Board adopts Version 0 standards.   | To be determined |
| 7. Effective date.   | To be determined |

## DEFINITIONS OF TERMS USED IN STANDARD

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## A. Introduction

1. **Title:** Reliability Coordinator Operational Analyses and Real-Time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the bulk electric system is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** Three months after Board of Trustee Adoption.

## B. Requirements

- R1. The reliability coordinator shall perform operational planning analyses to assess whether the planned operations within its wide area, including other reliability coordinator areas, will exceed any of its interconnection reliability operating limits (IROLs).
- R2. The reliability coordinator shall perform real-time assessments every 30 minutes to determine if its wide area is exceeding any IROLs or is expected to exceed any IROLs.
- R3. When the results of the reliability coordinator's operational planning analyses or real-time assessments indicate the need for specific operational actions to prevent or mitigate instances of exceeding IROLs, the reliability coordinator shall share its results with those entities that are expected to take those actions.

## C. Measures

- M1. The reliability coordinator shall be able to identify operating situations or events that impact its reliability coordinator area's ability to operate without exceeding any IROLs as a result of the following.
  - M1.1 The reliability coordinator shall have conducted an operational planning analysis at least once each day, evaluating the next day's projected system operating conditions.
  - M1.2 The reliability coordinator shall have conducted a real-time assessment periodically, but at least once every 30 minutes.
- M2. The reliability coordinator shall be able to show evidence that it shared the results of its operational planning analyses and real-time assessments with those entities expected to take actions based on that information. Evidence can be an operating log, voice recorder, fax, or other type of record.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Timeframe**

The performance-reset period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The compliance monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The reliability coordinator shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews once every three years, and investigations upon complaint, to assess performance.

The reliability coordinator shall identify the following to its compliance monitor to inspect as part of a scheduled on-site review or as part of an investigation upon complaint.

- 1.4.1 The time the most recent operational planning analysis was conducted.
- 1.4.2 Whether the planned operations within the reliability coordinator’s reliability coordinator area may exceed any of its IROLs.
- 1.4.3 The time the most recent real-time assessment was conducted.
- 1.4.4 Whether the real-time assessment identified if its reliability coordinator area is exceeding any IROLs or is expected to exceed any IROLs.

**2. Levels of Non-Compliance**

- 2.1. **Level 1:** Not applicable
- 2.2. **Level 2:** Not applicable
- 2.3. **Level 3:** A level three noncompliance exists if operational planning analyses and real-time assessments were conducted but not as frequently as required.
- 2.4. **Level 4:** A level four noncompliance exists if the reliability coordinator could not identify whether the planned operations within its reliability coordinator area were expected to exceed any of its IROLs.

**E. Regional Differences**

None identified

**Version History**

Version	Date	Action	Change Tracking
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### **Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

#### **Development Steps Completed:**

1. SAC approves SAR for posting (March 10, 2002)
2. Drafting Team posts Draft SAR for comment (April 2 - May 3, 2002) (August 20 – September 29, 2002)
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6. Balloted December 18, 2003 - January 6, 2004
7. Drafting Team posts Drafts for comment (March 1 – April 14, 2004)

#### **Description of Current Draft:**

This informational draft reflects the Standard Authorization Committee’s directive to change the ‘reliability authority’ to the ‘reliability coordinator’. The drafting team is not soliciting comments during this posting.

#### **Future Development Plan:**

##### **Anticipated Actions**

##### **Anticipated Date**

- |  |                  |
|--|------------------|
| 1. Post revised Implementation Plan and recommendations for Version 0 revisions/retirements for 45 day comment period. | To be determined |
| 2. Post for 30-day pre-ballot period.  | To be determined |
| 3. First ballot of Version 0 standards.  | To be determined |
| 4. Recirculation ballot of Version 0 standards.  | To be determined |
| 5. 30-day posting before board adoption.   | To be determined |
| 6. Board adopts Version 0 standards.   | To be determined |
| 7. Effective date.   | To be determined |

## DEFINITIONS OF TERMS USED IN STANDARD

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**Interconnection Reliability Operating Limit Event:** Any instance of exceeding an interconnection reliability operating limit for a minimum of 30 continuous seconds.

**Interconnection Reliability Operating Limit Event Duration:** The length of time an interconnection reliability operating limit is exceeded. The duration is measured from the point in time where the limit is first exceeded for at least 30 continuous seconds and ends at the beginning of the continuous 30 seconds in which the value returns to within the interconnection reliability operating limit.

**Occurrence Period:** The time period in which performance is measured and evaluated.

**A. Introduction**

- 1. Title:** Reliability Coordinator Actions to Operate Within IROLs
- 2. Number:** IRO-009-1
- 3. Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding IROLs.
- 4. Applicability**
  - 4.1.** Reliability Coordinator
- 5. Proposed Effective Date:** Three months after Board of Trustee adoption.

**B. Requirements**

- R1.** The reliability coordinator shall, without delay, act or direct others to act to:
  - R1.1.** Prevent instances of exceeding interconnection reliability operating limit s (IROLs).
  - R1.2.** Mitigate the magnitude and duration of instances of exceeding IROLs.
  - R1.3.** The reliability coordinator shall include a statement in each IROL-related directive to inform the recipient that the directive is related to an IROL.
  - R1.4.** The reliability coordinator shall document each instance of exceeding an IROL and shall document and complete an IROL violation report for each instance of exceeding an IROL for time greater than that limit’s  $T_v$ . The reliability coordinator shall file each IROL violation report with its compliance monitor within five business days of the initiation of the event.
- R2.** If the reliability coordinator directs a modification to an Implemented Interchange, the reliability coordinator shall direct the interchange authority to update the arranged interchange.

**C. Measures**

- M1.** The reliability coordinator shall have documentation to support each instance where actions were taken or directives were issued to mitigate the magnitude and duration of exceeding an IROL.
- M2.** The documentation shall include the date and time of the event, actions taken or directives issued, the magnitude of the event, and the duration of the event (This data may be from an operating log, may be from the entity’s energy management system, or may be from some other source).
- M3.** The duration of the event shall be measured from the point when the limit is exceeded for a minimum of thirty seconds to the point when the system has returned to a state that is within the IROL for a minimum of thirty seconds.
- M4.** The reliability coordinator shall have a completed IROL violation report for each instance where it exceeded an IROL for time greater than that limit’s  $T_v$ .
- M5.** The IROL violation report shall include the date and time of the event, identification of which IROL was violated and the  $T_v$  for that limit, magnitude and duration of exceeding the IROL, actions taken or directives issued and the time these were initiated or issued, and an explanation of results of those actions or directives.



**M5.1** The reliability coordinator shall have evidence it filed a completed IROL Violation Report with its Compliance Monitor within five business days of the initiation of the IROL event.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization

**1.2. Compliance Monitoring Period and Reset Timeframe**

The performance-reset period shall be 12 months from the last violation.

**1.3. Data Retention**

The reliability coordinator shall keep IROL violation reports, operations logs, or other documentation for three calendar years. The compliance monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The reliability coordinator shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The reliability coordinator shall have the following available for its compliance monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances

**1.4.2** IROL violation reports

**2. Levels of Non-Compliance**

**2.1. Level 1:** IROL exceeded for a time less than or equal to  $T_v$  and no documentation to indicate actions taken or directives issued to mitigate the instance.

**2.2. Level 2:** Not Applicable

**2.3. Level 3:** Not Applicable

**2.4. Level 4:** IROL exceeded for time greater than  $T_v$ .

**E. Regional Differences**

None identified

**Version History**

Version	Date	Action	Change Tracking
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## Standard Development Roadmap

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6. Balloted (December 18, 2003 - January 6, 2004)
7. Drafting Team posts Drafts for comment (March 1 – April 14, 2004)

### Description of Current Draft:

This informational draft reflects the Standard Authorization Committee’s directive to change the ‘reliability authority’ to the ‘reliability coordinator’. The drafting team is not soliciting comments during this posting.

### Future Development Plan:

#### Anticipated Actions

1. Post for 45-day comment period
2. Post for 30-day pre-ballot period.
3. First ballot of Version 0 standards.
4. Recirculation ballot of Version 0 standards.
5. 30-day posting before board adoption.
6. Board adopts Version 0 standards.
7. Effective date.

#### Anticipated Date

To be determined  
To be determined  
To be determined  
To be determined  
To be determined  
To be determined  
To be determined

### **DEFINITIONS OF TERMS USED IN STANDARD**

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*None introduced in this standard.*

## A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the reliability coordinator has the data it needs to monitor and assess the operation of its reliability coordinator area.
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** Three months after Board of Trustee adoption.

## B. Requirements

- R1. The reliability coordinator shall specify and collect the data and information it needs to support real-time monitoring, operational planning analyses, and real-time assessments conducted relative to operating within its reliability coordinator area's interconnection reliability operating limits(IROLs). The reliability coordinator shall collect this data from the entities performing functions that have facilities monitored by the reliability coordinator, and from entities that provide real-time facility status to the reliability coordinator. This includes specifying and collecting data from the following:
  - R1.1. Balancing authorities
  - R1.2. Generator owners
  - R1.3. Generator operators
  - R1.4. Interchange authority
  - R1.5. Load-serving entities
  - R1.6. Reliability coordinators
  - R1.7. Transmission operators
  - R1.8. Transmission owners
- R2. The reliability coordinator shall specify when to supply data and information (based on its hardware and software requirements, and the time needed to do its operational planning analyses).
- R3. The reliability coordinator shall notify its compliance monitor (within 5 business days of being unable to resolve the issue) when both of the following conditions are present:
  - R3.1. An entity that has data needed to support real-time monitoring, perational planning, or real-time assessments relative to operating within the reliability coordinator's reliability coordinator area has not provided data as specified, and
  - R3.2. The reliability coordinator was unable to resolve the issue with the entity responsible for providing the data.

## C. Measures

- M1. The reliability coordinator shall have a documented specification for data needed to build and maintain models needed to support real-time monitoring, operational planning analyses, and real-time assessments relative to interconnection reliability operating limits.

- M1.1** Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.
- M1.2** Specification shall address the data provision process to use when automated real-time system operating data is unavailable.
- M2.** The reliability coordinator shall have evidence that it has distributed its data specification to entities that have Facilities monitored by the reliability coordinator and to entities that provide facility status to the reliability coordinator.
- M3.** The reliability coordinator shall have evidence it notified its compliance monitor when an entity that has facilities monitored by the reliability coordinator, or an entity that provides facility status to the reliability coordinator, does not provide data as specified and the reliability coordinator was unable to resolve the issue with the entity responsible for providing the data.
  - M3.1** If the reliability coordinator does not receive data as specified, and is unable to resolve the situation, then the reliability coordinator shall notify its compliance monitor within five business days of discovering that the issue of the missing data could not be resolved.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization

#### **1.2. Compliance Monitoring Period and Reset Timeframe**

The performance-reset period shall be 12 months from the last violation.

#### **1.3. Data Retention**

The reliability coordinator shall keep its data specification(s) for three calendar years. The compliance monitor shall keep audited data for three calendar years.

#### **1.4. Additional Compliance Information**

The reliability coordinator shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance. The reliability coordinator shall have the following available for its compliance monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Data specification(s)

**1.4.2** Proof of distribution of the data specification(s)

### **2. Levels of Non-Compliance**

- 2.1. Level 1:** Data specification incomplete (missing either the list of required data, a mutually agreeable format, a timeframe for providing data, or a data provision process to use when automated real-time system operating data is unavailable).
- 2.2. Level 2:** No data specification or the specification not distributed to the entities that have Facilities monitored by the reliability coordinator and the entities that provide the reliability coordinator with facility status.
- 2.3. Level 3:** Not Applicable

2.4. Level 4: Not Applicable

**E. Regional Differences**

None identified

**Version History**

Version	Date	Action	Change Tracking
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## Standard Development Roadmap

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### Development Steps Completed:

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### Description of Current Draft:

This informational draft reflects the Standard Authorization Committee’s directive to change the ‘reliability authority’ to the ‘reliability coordinator’. The drafting team is not soliciting comments during this posting.

### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

- |  |                  |
|--|------------------|
| 1. Post revised Implementation Plan and recommendations for Version 0 revisions/retirements for 45 day comment period. | To be determined |
| 2. Post for 30-day pre-ballot period.  | To be determined |
| 3. First ballot of Version 0 standards.  | To be determined |
| 4. Recirculation ballot of Version 0 standards.  | To be determined |
| 5. 30-day posting before board adoption.   | To be determined |
| 6. Board adopts Version 0 standards.   | To be determined |
| 7. Effective date.   | To be determined |



## DEFINITIONS OF TERMS USED IN STANDARD

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*None introduced in this standard.*

## A. Introduction

1. **Title:** **Providing Reliability–Related Data to the Reliability Coordinator**
2. **Number:** IRO-011-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the reliability coordinator has the data it needs to monitor and assess the operation of its reliability coordinator area.
4. **Applicability**
  - 4.1. Balancing Authority
  - 4.2. Generator Owner
  - 4.3. Generator Operator
  - 4.4. Interchange Authority
  - 4.5. Load-Serving Entity
  - 4.6. reliability coordinator
  - 4.7. Transmission Operator
  - 4.8. Transmission Owner
5. **Proposed Effective Date:** Three months after Board of Trustee adoption.

## B. Requirements

- R1. Each entity performing one of the following functions shall provide data, and information, as specified, to the reliability coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the reliability coordinator to support real-time monitoring, operational planning analyses, and real-time assessments conducted relative to operating within its reliability coordinator area’s interconnection reliability operating limits (IROLs).
  - R1.1. Balancing Authority
  - R1.2. Generator Owner
  - R1.3. Generator Operator
  - R1.4. Interchange Authority
  - R1.5. Load-serving Entity
  - R1.6. Reliability Coordinator
  - R1.7. Transmission Operator
  - R1.8. Transmission Owner

## C. Measures

- M1. The balancing authority, generator owner, generator operator, load-serving entity, reliability coordinator, transmission operator and transmission owner shall each have the following:
  - M1.1 Evidence that it provided data and information, as specified, to the requesting reliability coordinator, within the timeframe specified, in the mutually agreed upon format, or
  - M1.2 Evidence that it committed to providing the data identified in the specification.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Timeframe

The performance-reset period is 12 months from the last violation.

#### 1.3. Data Retention

The responsible entity shall keep data transmittal documentation for three calendar years. The compliance monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The balancing authority, generator owner, generator operator, interchange authority, load-serving entity, reliability coordinator, transmission operator and transmission owner (responsible entity) shall each demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The responsible entity shall have the following available for its compliance monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Evidence indicating data was sent to the reliability coordinator or evidence that the responsible entity committed to providing the data identified in the specification.

### 2. Levels of Non-Compliance

**2.1. Level 1:** Not Applicable

**2.2. Level 2:** Not Applicable

**2.3. Level 3:** Not Applicable

**2.4. Level 4:** Data was not provided to the reliability coordinator as specified and the situation was not resolved with the reliability coordinator.

## E. Regional Differences

None identified

### Version History

Version	Date	Action	Change Tracking
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## Standard Development Roadmap

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### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

- |   |                  |
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| 1. Post revised Implementation Plan and recommendations for Version 0 revisions/retirements for 45 day comment period | To be determined |
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*None introduced in this standard.*

## A. Introduction

1. **Title:** Reliability Coordinator Processes, Procedures, or Plans for Preventing and Mitigating Interconnection Reliability Operating Limits
2. **Number:** IRO-012-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that there are processes, procedures or plans for foreseeable instances of exceeding interconnection reliability operating limits (IROs).
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** Three months after Board of Trustee Adoption.

## B. Requirements

- R1. The reliability coordinator shall have one or more operating processes, procedures, or plans that identify actions it shall take or actions it shall direct others to take, for both prevention and mitigation of instances of exceeding its IROs.

## C. Measures

- M1. The reliability coordinator shall have one or more documented operating processes, procedures, or plans that address both preventing and mitigating instances of exceeding IROs. There shall be evidence that the reliability coordinator coordinated the development of these operating procedures, processes, or plans with those entities responsible for taking actions and with those entities impacted by such actions.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Timeframe**

The performance-reset period is 12 months from the last violation.
  - 1.3. **Data Retention**

The reliability coordinator shall keep its action plan for three calendar years. The compliance monitor shall keep audit records for three calendar years.
  - 1.4. **Additional Compliance Information**

The reliability coordinator shall demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The reliability coordinator shall have the following available for its compliance monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint.

    - 1.4.1 Processes, procedures, or plans that address preventing and mitigating instances of exceeding IROs.

**2. Levels of Non-Compliance**

- 2.1. Level 1:** Operating processes, procedures, or plans for both preventing and mitigating instances of exceeding IROs exist, but these documents weren't coordinated with all involved and impacted entities.
- 2.2. Level 2:** Operating processes, procedures, or plans for both preventing and mitigating instances of exceeding IROs exist but these documents weren't coordinated with any involved or any impacted entities.
- 2.3. Level 3:** Operating processes, procedures, or plans exist but do not address both preventing and mitigating instances of exceeding IROs.
- 2.4. Level 4:** No operating processes, procedures, or plans exist addressing preventing and mitigating instances of exceeding IROs.

**E. Regional Differences**

None identified

**Version History**

Version	Date	Action	Change Tracking
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## Standard Development Roadmap

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### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

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| 2. Post for 30-day pre-ballot period.  | To be determined |
| 3. First ballot of Version 0 standards.  | To be determined |
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| 5. 30-day posting before board adoption.   | To be determined |
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*None introduced in this standard.*

## A. Introduction

1. **Title:** Reliability Coordinator Directives Relative to Interconnection Reliability Operating Limits
2. **Number:** IRO-013-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the reliability coordinator’s directives are followed.
4. **Applicability**
  - 4.1. Balancing Authority
  - 4.2. Interchange Authority
  - 4.3. Transmission Operator
5. **Proposed Effective Date:** Three months after Board of Trustee adoption.

## B. Requirements

- R1. The balancing authority, interchange authority, and transmission operator shall each follow its reliability coordinator’s directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances the balancing authority, interchange authority or transmission operator shall immediately inform the reliability coordinator of its inability to perform the directive so that the reliability coordinator can implement alternate remedial actions. The directives covered by this requirement shall be those that:
  - R1.1. Prevent instances of exceeding interconnection reliability operating limits (IROLs).
  - R1.2. Mitigate the magnitude and duration of instances of exceeding IROLs.
- R2. The balancing authority, interchange authority, and transmission operator shall notify its reliability coordinator when the actions associated with a directive have been completed.
  - R2.1. The balancing authority, interchange authority, and transmission operator shall each document the reliability coordinator’s directives and its actions taken.

## C. Measures

- M1. The Responsible Entity shall have the following documentation in an operations log or other data source(s), to show that it followed each directive it received relative to an IROL:
  - M1.1 Date and time of each reliability coordinator directive received
  - M1.2 Directive issued by the reliability coordinator
  - M1.3 Actions taken in response to the reliability coordinator’s directive

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Timeframe**

The performance-reset period is 12 months from the last violation.

**1.3. Data Retention**

The balancing authority, interchange authority, and transmission operator shall keep its documentation for three calendar years. The compliance monitor shall keep audit records for three calendar years.

**1.4. Additional Compliance Information**

The balancing authority, interchange authority, and transmission operator shall each demonstrate compliance through self-certification submitted to its compliance monitor annually. The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint to assess performance.

The balancing authority, interchange authority and transmission operator shall each make the following available for its compliance monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations log or other data source(s) to show the following for each instance of being issued a reliability coordinator directive relative to an IROL:

**1.4.1.1** Date and time of each reliability coordinator directive received.

**1.4.1.2** Directive issued by the reliability coordinator.

**1.4.1.3** Actions taken in response to reliability coordinator’s directive.

**2. Levels of Non-Compliance**

**2.1. Level 1:** The reliability coordinator’s directives relative to preventing or mitigating instances of exceeding IROLs were followed but the documentation did not include the date and time of each directive received, the directive received, the actions taken, in response to the directive.

**2.2. Level 2:** Not Applicable

**2.3. Level 3:** Not Applicable

**2.4. Level 4:** Did not follow the reliability coordinator’s directives.

**E. Regional Differences**

None identified

**Version History**

Version	Date	Action	Change Tracking
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## A. Introduction

1. **Title:** Emergency Operations Planning
2. **Number:** EOP-001-~~0~~1
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Date:** First day of first quarter, three months after regulatory approvals April 1, 2005

## B. Requirements

- R1.** Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- ~~**R2.**The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.~~
- ~~**R3.R2.**~~ Each Transmission Operator and Balancing Authority shall:
- ~~**R3.1.R2.1.**~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
- ~~**R3.2.R2.2.**~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
- ~~**R3.3.R2.3.**~~ Develop, maintain, and implement a set of plans for load shedding.
- ~~**R3.4.R2.4.**~~ Develop, maintain, and implement a set of plans for system restoration.
- ~~**R4.R3.**~~ Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
- ~~**R4.1.R3.1.**~~ Communications protocols to be used during emergencies.
- ~~**R4.2.R3.2.**~~ A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
- ~~**R4.3.R3.3.**~~ The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
- ~~**R4.4.R3.4.**~~ Staffing levels for the emergency.
- ~~**R5.R4.**~~ Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

## Standard EOP-001-~~0~~1 — Emergency Operations Planning

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**R6.R5.** The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.

**R7.R6.** The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:

**R7.1.R6.1.** The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.

**R7.2.R6.2.** The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.

**R7.3.R6.3.** The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)

**R7.4.R6.4.** The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

### C. Measures

- M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2.** The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

##### 1.2. Compliance Monitoring Period and Reset Timeframes

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

##### 1.3. Data Retention

Current plan available at all times.

##### 1.4. Additional Compliance Information

Not specified.

#### 2. Levels of Non-Compliance

- 2.1. Level 1:** One of the applicable elements of Attachment 1-EOP-001-0 has not been addressed in the emergency plans.

## Standard EOP-001-~~0~~1— Emergency Operations Planning

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- 2.2. Level 2:** Two of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans.
- 2.3. Level 3:** Three of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans.
- 2.4. Level 4:** Four or more of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans or a plan does not exist.

### E. Regional Differences

None identified.

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system's own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

## A. Introduction

1. **Title:** Reliability Coordination — Facilities
2. **Number:** IRO 002-~~12~~
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.
5. **Proposed Effective Date:** ~~January 1, 2007~~ First day of first quarter, three months after regulatory approvals.

## B. Requirements

**R1.** Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.

~~**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities, or adjacent Reliability Coordinators.~~

**R3.R2.** Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.

**R4.R3.** Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.

**R5.R4.** Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.

~~**R6.** Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.~~



R7.R5. Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.

R8.R6. Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.

R9.R7. Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

### C. Measures

**M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 43.

**M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 43.

~~**M3.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a letter to Transmission Operators, Balancing Authorities, Transmission Owners, Generator Owners, Generator Operators, and Load Serving Entities, or adjacent Reliability Coordinators, or other equivalent evidence that will be used to confirm that the Reliability Coordinator has requested the data required to support its reliability coordination tasks. (Requirement 2)~~

M4.M3. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.

M5.M4. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 57.

**M6.M5.** Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement **86**)

**M7.M6.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement **9-7** Part 1.

**M8.M7.** Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement **9-7** Part 2.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

#### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### 1.3. Data Retention

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1 through **87**.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

None.

**2. Levels of Non-Compliance for a Reliability Coordinator**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Did not confirm that the network used for data exchange to other Reliability Coordinators is secure as specified in ~~R3~~R2.

~~2.3. Level 3: There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~2.3.1 Has not requested the data required to support its reliability coordination tasks. (Requirement 2)~~

~~2.3.2.2.3.~~ Does not control its Reliability Coordinator analysis tools, including the exercising of final approvals for planned maintenance (~~R7~~R5) or does not have current procedures in place to mitigate the effects of analysis tool outages as specified in ~~R9~~R7.

**2.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

**2.4.1** Does not have or could not demonstrate the use of voice communication facilities (or show data links) to one or more Transmission Operators, Generator Operators or Balancing Authorities with authority over Bulk Electrical System equipment or with one or more neighboring Reliability Coordinators. (R1 and ~~R4~~R3)

**2.4.2** Does not have real-time monitoring capability of its Reliability Coordinator Area and surrounding Reliability Coordinator Areas as specified in ~~R5~~R4.

**2.4.3** Does not have a documented procedure for the use of its backup monitoring facilities. (~~R8~~R6)

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective	Errata

**Standard IRO-002-1~~2~~ — Reliability Coordination — Facilities**

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		Date	
1	November 1, 2006	Adopted by Board of Trustees	Revised

Retire entire standard

## A. Introduction

1. **Title:** ~~Reliability Coordination — Wide Area View~~
2. **Number:** ~~IRO-003-2~~
3. **Purpose:** ~~The Reliability Coordinator must have a wide-area view of its own Reliability Coordinator Area and that of neighboring Reliability Coordinators.~~
4. **Applicability**  
~~4.1. Reliability Coordinators.~~
5. **Effective Date:** ~~January 1, 2007~~ When IRO-007-1 becomes effective.

## B. Requirements

- ~~R1. Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~
- ~~R2. Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.~~

## C. Measures

- ~~M1. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection, or other equivalent evidence that will be used to confirm that it monitors adjacent Reliability Coordinator Areas as necessary to ensure that, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

~~Regional Reliability Organizations shall be responsible for compliance monitoring.~~
  - 1.2. **Compliance Monitoring and Reset Time Frame**

~~One or more of the following methods will be used to assess compliance:~~

    - ~~– Self-certification (Conducted annually with submission according to schedule.)~~
    - ~~– Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)~~

- ~~–Periodic Audit (Conducted once every three years according to schedule.)~~
- ~~–Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case by case basis.)~~

~~The Performance Reset Period shall be 12 months from the last finding of non-compliance.~~

### **1.3. Data Retention**

~~Each Reliability Coordinator shall have current in force documents used to show compliance with Measure 1.~~

~~If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.~~

~~Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,~~

~~The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.~~

### **1.4. Additional Compliance Information**

~~None.~~

## **2. Levels of Non-Compliance for a Reliability Coordinator**

**2.1. Level 1:** ~~Not applicable.~~

**2.2. Level 2:** ~~Not applicable.~~

**2.3. Level 3:** ~~Not applicable.~~

**2.4. Level 4:** ~~Did not produce acceptable evidence to confirm that it monitors adjacent Reliability Coordinator Areas as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~

## **E. Regional Differences**

~~None identified.~~

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	February 7, 2006	Adopted by Board of Trustees	Revised
2	November 1, 2006	Adopted by Board of Trustees	Revised

Retire Entire Standard

**A. Introduction**

1. **Title:** ~~Reliability Coordination — Operations Planning~~
2. **Number:** ~~IRO-004-1~~
3. **Purpose:** ~~Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.~~
4. **Applicability**
  - ~~4.1. Reliability Coordinators.~~
  - ~~4.2. Balancing Authorities.~~
  - ~~4.3. Transmission Operators.~~
  - ~~4.4. Transmission Service Providers.~~
  - ~~4.5. Transmission Owners.~~
  - ~~4.6. Generator Owners.~~
  - ~~4.7. Generator Operators.~~
  - ~~4.8. Load-Serving Entities.~~
5. **Effective Date:** First day of first quarter, three months after regulatory approvals~~November 1, 2006~~

**B. Requirements**

- ~~R1. Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.~~
- ~~R2. Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.~~
- ~~R3-R1. \_\_\_\_\_ Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.~~
- ~~R4. Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.~~



~~R5. Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.~~

~~R6.R2. If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.~~

~~R7. Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.~~

### C. Measures

~~M1. Evidence that the Reliability Coordinator conducted next day contingency analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System could be operated reliably in anticipated normal and Contingency conditions.~~

### D. Compliance

#### 1. Compliance Monitoring Process

~~Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on-site audit, Reliability Coordinators will be asked to provide documentation showing that next-day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits; etc.~~

##### 1.1. Compliance Monitoring Responsibility

~~Self-Certification: Each Reliability Coordinator must annually self-certify compliance to its Regional Reliability Organization with the completion of the studies and action plans in Requirements R1, R2 and R3.~~

~~Exception Reporting: Reliability Coordinators will prepare a monthly report to the Regional Reliability Organization for each month that system studies were not conducted, indicating the dates that studies were not done and the reason why.~~

##### 1.2. Compliance Monitoring Period and Reset Time Frame

~~One year without a violation from the time of the violation.~~

##### 1.3. Data Retention

~~Documentation shall be available for 3 months to provide verification that system studies were performed as required.~~

##### 1.4. Additional Compliance Information

~~None identified.~~

#### 2. Levels of Non-Compliance

~~2.1. Level 1: System studies were not conducted for one day in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.2.2.1. Level 2: System studies were not conducted for 2–3 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.3.2.2. Level 3: System studies were not conducted for 4–5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.4.2.3. Level 4: System studies were not conducted for more than 5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

**E. Regional Differences**

~~None identified.~~

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## A. Introduction

1. **Title:** Reliability Coordination — Current Day Operations
2. **Number:** IRO-005-~~2~~3
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.
5. **Proposed Effective Date:** First day of first quarter, three months after regulatory approvals~~January 1, 2007~~

## B. Requirements

- ~~R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:~~
- ~~R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.~~
  - ~~R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.~~
  - ~~R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.~~
  - ~~R1.4. System real and reactive reserves (actual versus required).~~
  - ~~R1.5. Capacity and energy adequacy conditions.~~
  - ~~R1.6. Current ACE for all its Balancing Authorities.~~
  - ~~R1.7. Current local or Transmission Loading Relief procedures in effect.~~
  - ~~R1.8. Planned generation dispatches.~~
  - ~~R1.9. Planned transmission or generation outages.~~
  - ~~R1.10. Contingency events.~~
- R2.R1. Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that

~~Interchange Transaction information available to all Reliability Coordinators in the Interconnection.~~

~~R3. As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.~~

R4.R2. Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.

~~R5. Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.~~

R6.R3. Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.

R7.R4. The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.

R8.R5. Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

R9.R6. The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

R10.R7. As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.

R11.R8. The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.

~~R12.R9.~~ Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

~~R10.~~ ~~Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection.~~ In instances where there is a difference in derived limits, the ~~Reliability Coordinator and its~~ Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.

**R11.** Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs ~~or~~ and IROLs within its wide-area view. The Transmission Service Providers shall respect ~~these~~ SOLs ~~or~~ and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.

~~R15.R12.~~ Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.

~~R16.~~ ~~Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.~~

~~R17.~~ ~~When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.~~

### C. Measures

~~M1.~~ ~~The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.~~

~~M2.M1.~~ ~~The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Historical Tag Archive information, Interchange Transaction records, computer printouts, voice recordings or transcripts of voice recordings or equivalent evidence that will be used to confirm that it was aware of and made Interchange~~

Transaction information ~~available to all other Reliability Coordinators~~, as specified in Requirement ~~2~~1.

~~M3.~~ If a potential or actual IROL violation occurs, the Reliability Coordinator involved in the event shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, system event logs, operator action notes or equivalent evidence that will be used to determine if it initiated control actions or emergency procedures to relieve that IROL violation within 30 minutes. (Requirement 3 Part 2 and Requirement 5)

~~M4.M2.~~ If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement ~~4~~2 Part 2 and Requirement ~~4~~7)

~~M5.M3.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement ~~6~~3)

~~M6.M4.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement ~~7~~4.

~~M7.M5.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement ~~8~~5 Part 1.

~~M8.M6.~~ The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement ~~8~~5 Part 2)

~~M9.M7.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement ~~9~~6 Part 1)

~~M10.M8.~~ If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs,

voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement ~~11.8~~ Part 1)

**M11.M9.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement ~~12.9~~)

**M10.** If there is an instance where there is a disagreement on a derived limit, the ~~Reliability Coordinator,~~ Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (~~Part 2 of~~ Requirement ~~13.10~~)

**M13.M11.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it provided SOL and IROL information to Transmission Service Providers within its Reliability Coordinator Area. (Requirement ~~14.11~~, Part 1)

**M14.M12.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement ~~14.11~~ Part 2)

**M15.M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement ~~15.12~~ Part 1.

**M16.M14.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement ~~15.12~~ Part 2.

**M17.M15.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated. (Requirement ~~15.12~~ Part 3)

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### 1.3. Data Retention

For Measures ~~1-9 and 11~~, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures ~~21-10-8 and~~ 21-10-8 and ~~Measure 1311~~, and Measures ~~15-13~~ through 1615, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure ~~68~~, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure ~~1210~~, the ~~Reliability Coordinator~~, Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure ~~1412~~, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

#### 1.4. Additional Compliance Information

None.



2. **Levels of Non-Compliance for a Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider**
  - 2.1. **Level 1:** Not applicable.
  - 2.2. **Level 2:** Not applicable.
  - 2.3. **Level 3:** Not applicable.
  - 2.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
    - 2.4.1 Did not follow the Reliability Coordinator's directives in accordance with ~~R8-R5~~ Part 2).
    - 2.4.2 Did not operate to the most limiting parameter when a difference in derived limits existed. (~~R13-R10~~Part 2)
3. **Levels of Non-Compliance for a Reliability Coordinator:**
  - 3.1. **Level 1:** Not applicable.
  - 3.2. **Level 2:** ~~Did not make Interchange Transaction information available to all other Reliability Coordinators in the Interconnection. (Requirement 2)~~Not applicable.
  - 3.3. **Level 3:** There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:
    - 3.3.1 Did not communicate to each of its Balancing Authorities and Transmission Operators to make them aware of GMD forecast information or did not assist in the development of any required response plans to a predicted GMD. (Requirement ~~6~~3)
    - 3.3.2 Did not disseminate information within its Reliability Coordinator Area. (Requirement ~~7~~4)
  - 3.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
    - ~~3.4.1 Does not meet one or more of the requirements as specified in requirement 1 (Requirements 1.1 through R1.9)~~
    - ~~3.4.2 Did not make Interchange Transaction information available to all other Reliability Coordinators. (Requirement 2)~~
    - ~~3.4.3 Did not initiate control actions or emergency procedures to relieve an IROL violation without delay, and no longer than 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~
    - 3.4.3.4.1 Did not direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement ~~4~~2 Part 2)
    - ~~3.4.5~~3.4.2 Did not monitor the system frequency or each of its Balancing Authorities performance or did not direct rebalancing to return to DCS and CPS compliance. (Requirement ~~8~~5 Part 1)
    - ~~3.4.6~~3.4.3 Did not coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to

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mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. (Requirement ~~96~~)

~~3.4.73.4.4~~ When it identified a source of large Area Control Errors, it did not initiate corrective actions with the appropriate Balancing Authority if the problem was inside its Reliability Coordinator Area. (Requirement ~~11-8~~ part 1)

~~3.4.83.4.5~~ Did not provide evidence that it was aware of the impact of the operation of a Special Protection System on inter-area flows. (Requirement ~~129~~)

~~3.4.9~~ Did not operate to the most limiting parameter when a difference in derived limits existed. (Requirement ~~13 Part 2~~)

~~3.4.10~~ Did not provide Transmission Service Providers with SOLs or IROLs (within the Reliability Coordinator's wide-area view) (Requirement ~~14 Part 1~~)

~~3.4.113.4.6~~ Did not issue alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area. (Requirement ~~1512~~)

### 4. Levels of Non-Compliance for a Transmission Service Provider

4.1. Level 1: Not applicable.

4.2. Level 2: Not applicable.

4.3. Level 3: Not applicable.

4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

4.4.1 Did not operate to the most limiting parameter when a difference in derived limits existed. (~~R13-R10~~Part 2)

4.4.2 Did not respect the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14-~~Part-12~~)

### E. Regional Differences

None identified.

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed "Proposed" from Effective Date	Errata

## A. Introduction

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-~~01~~
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:** ~~April 1, 2005~~ First day of first quarter, three months after regulatory approvals.

## B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to ~~its Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.
- R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

**C. Measures**

- M1.** Evidence that the Generator Operator, Transmission Operator, and Balancing Authority, ~~and Reliability Coordinator~~ reported and coordinated scheduled outage information as indicated in the requirements above.

## D. Compliance

### 1. Compliance Monitoring Process

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

#### 1.1. Compliance Monitoring Responsibility

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

#### 1.2. Compliance Monitoring Period and Reset Timeframe

One calendar year without a violation from the time of the violation.

#### 1.3. Data Retention

One calendar year.

#### 1.4. Additional Compliance Information

Not specified.

### 2. Levels of Non-Compliance

**2.1. Level 1:** Each entity responsible for reporting information under Requirements R1 and R3 has a process in place to provide information to their Reliability Coordinator but does not have a process in place (where permitted by legal agreements) to provide this information to the neighboring Balancing Authority or Transmission Operator.

**2.2. Level 2:** N/A.

**2.3. Level 3:** N/A.

**2.4. Level 4:** There is no process in place to exchange outage information, or the entity responsible for reporting information under Requirements R1 to R3 does not follow the directives of the Reliability Coordinator to cancel or reschedule an outage.

## E. Regional Differences

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## A. Introduction

1. **Title:** Operational Reliability Information
2. **Number:** TOP-005-~~1~~2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - ~~4.3. Reliability Coordinators.~~
  - ~~4.4.3.~~ Purchasing Selling Entities.
5. **Proposed Effective Date:** ~~November 1, 2006~~First day of first quarter, three months after regulatory approvals.

## B. Requirements

~~R1.~~ Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.

~~R1.1.~~ Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1 TOP 005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.

~~R2.R1.~~ As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”

~~R3.R2.~~ Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.

~~R4.R3.~~ Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

## C. Measures

- M1. Evidence that the ~~Reliability Coordinator~~, Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

## D. Compliance

1. **Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

**1.2. Compliance Monitoring Period and Reset Time Frame**

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

Not specified.

**1.4. Additional Compliance Information**

Not specified.

**2. Levels of Non-Compliance**

**2.1. Level 1:** Each entity responsible for reporting information under Requirements R1 to ~~R5~~R3 is providing the requesting entities with the data required, in specified time intervals and format, but there are problems with consistency of delivery identified in the measuring process that need remedy (e.g., the data is not supplied consistently due to equipment malfunctions, or scaling is incorrect).

**2.2. Level 2:** N/A.

**2.3. Level 3:** N/A.

**2.4. Level 4:** Each entity responsible for reporting information under Requirements R1 to ~~R5~~R3 is not providing the requesting entities with data with the specified content, timeliness, or format. The information missing is included in the requesting entity’s list of data.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata



**Attachment 1-TOP-005-0**

**Electric System Reliability Data**

This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.

1. The following information shall be updated at least every ten minutes:
  - 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:
    - 1.1.1 Status.
    - 1.1.2 MW or ampere loadings.
    - 1.1.3 MVA capability.
    - 1.1.4 Transformer tap and phase angle settings.
    - 1.1.5 Key voltages.
  - 1.2. Generator data.
    - 1.2.1 Status.
    - 1.2.2 MW and MVAR capability.
    - 1.2.3 MW and MVAR net output.
    - 1.2.4 Status of automatic voltage control facilities.
  - 1.3. Operating reserve.
    - 1.3.1 MW reserve available within ten minutes.
  - 1.4. Balancing Authority demand.
    - 1.4.1 Instantaneous.
  - 1.5. Interchange.
    - 1.5.1 Instantaneous actual interchange with each Balancing Authority.
    - 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.
    - 1.5.3 Interchange Schedules for the next 24 hours.
  - 1.6. Area Control Error and frequency.
    - 1.6.1 Instantaneous area control error.
    - 1.6.2 Clock hour area control error.
    - 1.6.3 System frequency at one or more locations in the Balancing Authority.
2. Other operating information updated as soon as available.
  - 2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.
  - 2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.
  - 2.3. Forecast peak demand for current day and next day.
  - 2.4. Forecast changes in equipment status.

- 2.5. New facilities in place.
- 2.6. New or degraded special protection systems.
- 2.7. Emergency operating procedures in effect.
- 2.8. Severe weather, fire, or earthquake.
- 2.9. Multi-site sabotage.

## A. Introduction

1. **Title:** Monitoring System Conditions
2. **Number:** TOP-006-~~1~~2
3. **Purpose:**  
To ensure critical reliability parameters are monitored in real-time.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Generator Operators.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:** ~~January 1, 2007~~First day of first quarter, three months after regulatory approvals.

## B. Requirements

- R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.
  - R1.1. Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
  - R1.2. Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
- R2. Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.
- R3. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.
- R4. Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.
- R5. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions and to indicate, if appropriate, the need for corrective action.
- R6. Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.

- R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

### C. Measures

- M1. The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3. Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4. Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance monitoring.

##### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### 1.3. Data Retention

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.:

Each Reliability Coordinator, shall have current documents as evidence for Measure 5 and 6.

Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

### 1.4. Additional Compliance Information

None.

## 2. Levels of Non-Compliance for Reliability Coordinators:

2.1. Level 1: Not applicable.

2.2. Level 2: Not applicable.

2.3. Level 3: Not applicable.

2.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

2.4.1 ~~Does not monitor all of the applicable items listed in Requirement 2. Not applicable.~~

2.4.2 ~~Did not have the information specified in R4. Not applicable.~~

2.4.3 Did not bring to the attention of its operators, important deviations in operating conditions and the need for corrective actions. (Requirement 5)

2.4.4 No evidence it monitors system frequency. (Requirement 7)

3. **Levels of Non-Compliance for Generator Operators:**

3.1. **Level 1:** Not applicable.

3.2. **Level 2:** Not applicable.

3.3. **Level 3:** Not applicable.

3.4. **Level 4:** Did not inform its Host Balancing Authority and/or the Transmission Operator of all generation resources available for use. (R1.1)

4. **Levels of Non-Compliance for Transmission Operators and Balancing Authorities:**

4.1. **Level 1:** Not applicable.

4.2. **Level 2:** Not applicable.

4.3. **Level 3:** Not applicable.

4.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

4.4.1 Did not inform the Reliability Coordinator and/or other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use in accordance with R1.2.

4.4.2 Does not monitor all the applicable items listed in R2.

4.4.3 Did not have the information specified in R4.

4.4.4 Does not have monitoring to bring to the attention of operating personnel important deviations in operating conditions and the need for corrective actions as specified in R5.

4.4.5 No evidence it monitors system frequency. (R7).

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New

**Standard TOP-006-~~1~~2— Monitoring System Conditions**

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0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised

### **Standard Development Roadmap**

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##### **Anticipated Actions**

##### **Anticipated Date**

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### **Definitions of Terms Used in Standard**

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**Real-Time Data:** Real-Time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

## A. Introduction

1. **Title:** **Monitoring the Reliability Coordinator Wide Area**
2. **Number:** **IRO-007-1**
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is continuously monitored.
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** First day of first quarter, three months after regulatory approvals.

## B. Requirements

- R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs). (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Real-time Operations*)
- R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (*Violation Risk Factor: High*) (*Mitigation Time Horizon: Real-time Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have Real-Time Data for system operating parameters within its Wide Area available in a form that its System Operators can compare to its IROLs as evidence of real-time monitoring.
- M2. For an IROL or its  $T_v$  without agreement between Reliability Coordinators, the Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence to confirm that it used the most conservative of the values under consideration.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Electric Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The Reliability Coordinator shall have evidence of compliance with M1 upon request.

The Reliability Coordinator shall keep evidence to show compliance with M2 for three calendar years

The Compliance Monitor shall keep audited data for three calendar years.
  - 1.4. **Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall demonstrate the following to its Compliance Monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:

**1.4.1** Its System Operators actively monitoring and comparing Real-Time system operating parameters associated with IROLs.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Not applicable.

**2.3. High:** Not applicable.

**2.4. Severe:** A severe violation occurs if either of the following conditions are present:

**2.4.1** System operating parameters not monitored in Real-Time and compared against IROLs.

**2.4.2** There was a disagreement on the IROL or its  $T_v$  and the most conservative limit under consideration was not used.

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

### **Standard Development Roadmap**

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#### **Future Development Plan:**

##### **Anticipated Actions**

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2. First ballot of standards.
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##### **Anticipated Date**

March 1–30, 2007  
April 2–11, 2007  
April 16–26, 2007  
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May 2, 2007

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

**A. Introduction**

1. **Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:** First day of first quarter, three months after regulatory approvals.

**B. Requirements**

- R1. The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Operations Planning*)
- R2. The Reliability Coordinator shall perform Real-Time Assessments at least every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Mitigation Time Horizon: Real-time Operations*)
- R3. When the results of the Reliability Coordinator’s Operational Planning Analyses or Real-Time Assessments indicate the need for specific operational actions to prevent or mitigate instances of exceeding IROLs, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Same Day Operations*)

**C. Measures**

- M1. The Reliability Coordinator shall have, and provide upon request, the results of its latest Operational Planning Analysis.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to computer output, operator logs, checklists, or other evidence to show it conducted a Real-Time Assessment at least once every 30 minutes.
- M3. The Reliability Coordinator shall have and provide upon request, evidence that could include, but is not limited to operating logs, voice recordings, transcripts of voice records, facsimiles, or other equivalent evidence that will be used to confirm that it shared the results of its Operational Planning Analyses and Real-Time Assessments with those entities expected to take actions based on that information.

**D. Compliance**

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Electric Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The Compliance Monitor shall keep audited data for three calendar years.

The Reliability Coordinator shall keep its latest day-ahead Operational Planning Analysis.

The Reliability Coordinator shall keep evidence for M2 for the most recent two days.

The Reliability Coordinator shall keep evidence for M3 for one month.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Shared the results with some but not all of the entities that were required to take action (R3).

**2.3. High:** Real-Time Assessments were conducted but not as frequently as required (R2).

**2.4. Severe:** A severe violation exists if any of the following conditions are present:

**2.4.1** Did not perform an Operational Planning Analysis for the next day in accordance with R1.

**2.4.2** Did not perform any Real-time Assessments for any continuous eight-hour period (R2).

**2.4.3** Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

### **Standard Development Roadmap**

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### Definitions of Terms Used in Standard

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**Interconnection Reliability Operating Limit Event:** Any instance of exceeding an Interconnection Reliability Operating Limit for a minimum of 30 continuous seconds.

**Interconnection Reliability Operating Limit Event Duration:** The length of time an Interconnection Reliability Operating Limit is exceeded. The duration is measured from the point in time where the limit is first exceeded for at least 30 continuous seconds and ends at the beginning of the continuous 30 seconds in which the value returns to within the Interconnection Reliability Operating Limit.

**Occurrence Period:** The time period in which performance is measured and evaluated.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** First day of first quarter, three months after regulatory approvals.

## B. Requirements

- R1. For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Operations Planning*)
- R2. For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shed) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>. (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Operations Planning*)
- R3. When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Mitigation Time Horizon: Real-time Operations*)
- R4. When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL. (*Violation Risk Factor: High*) (*Mitigation Time Horizon: Real-time Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, one or more documented Operating Processes, Procedures, or Plans that that will be used to confirm that it has Operating Processes, Procedures or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement 1 and Requirement 2.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence that will be used to confirm that it acted or directed others to act in accordance with Requirement 3 and Requirement 4.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Electric Reliability Organization
  - 1.2. **Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.

### 1.3. Data Retention

The Reliability Coordinator shall keep IROL Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. If an IROL is exceeded for time greater than  $T_v$ , the Reliability Coordinator shall complete and submit to its Compliance Monitor within five days, an IROL Violation Report.

The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances.

**1.4.2** IROL Violation Reports.

## 2. Violation Severity Levels

**2.1. Low:** Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

**2.2. Moderate** Between 85% to 94% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

**2.3. High:** **There shall be a high violation severity level if any of the following conditions exist:**

**2.3.1** Between 70% to 84% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

**2.3.2** Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)

**2.4. Severe:** **There shall be a severe violation severity level if any of the following conditions exist:**

**2.4.1** Less than 70% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

**2.4.2** An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures or Plans were implemented to prevent exceeding that IROL. (R3)

**2.4.3** Actual system conditions showed that there was an instance of exceeding an IROL, and no actions or directions were given to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)

**E. Regional Differences**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

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*None introduced in this standard.*

## A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:** First day of first quarter, three months after regulatory approvals.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Operations Planning*)
  - R1.1. List of required data and information
  - R1.2. Mutually agreeable format
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.
- R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Operations Planning*)
- R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

## C. Measures

- M1.** The Reliability Coordinator shall have, and provide upon request, a documented data specification that contains all elements identified in Requirement 1.
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.
- M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and provide upon request, evidence that could include but is not limited to, operator logs, voice recordings, computer printouts, SCADA data, or other equivalent evidence that will be used to confirm that it provided data and information, as specified in Requirement 3.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Electric Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall keep its most current data specification.

The Reliability Coordinator shall keep evidence to show compliance with Measure 2

For data that is requested in advance of real-time, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Measure 3 for 3 months.

The Compliance Monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Data specification(s).

**1.4.2** Proof of distribution of the data specification(s).

### 2. Violation Severity Levels for the Reliability Coordinator

- 2.1. Lower:** There shall be a lower violation severity level if any of the following conditions exist:



- 2.1.1 Distributed its data specification to 95-99% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)
    - 2.1.2 Provided 95-99% of the data and information to other Reliability Coordinators as specified. (R3)
  - 2.2. **Moderate: There shall be a moderate violation severity level of any of the following conditions exist:**
    - 2.2.1 Distributed its data specification to 85-94% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)
    - 2.2.2 Provided 85-94% of the data and information to other Reliability Coordinators as specified. (R3)
  - 2.3. **High: There shall be a high violation severity level of any of the following conditions exist:**
    - 2.3.1 Data specification incomplete (missing one of the following: list of required data, a mutually agreeable format, a timeframe for providing data, a data provision process to use when automated Real-Time system operating data is unavailable). (R1)
    - 2.3.2 Distributed its data specification to 70-84% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)
    - 2.3.3 Provided 70-84% of the data and information to other Reliability Coordinators as specified. (R3)
  - 2.4. **Severe: There shall be a severe violation severity level of any of the following conditions exist:**
    - 2.4.1 No data specification (R1)
    - 2.4.2 Data specification distributed to less than 70% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)
    - 2.4.3 Provided less than 70% of the data and information to other Reliability Coordinators as specified. (R3)
- 3. **Violation Severity Levels for the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner**
  - 3.1. **Lower:** Provided 95-99% of the data and information to the Reliability Coordinator as specified. (R3)
  - 3.2. **Moderate:** Provided 85-94% of the data and information to the Reliability Coordinator as specified. (R3)
  - 3.3. **High:** Provided 70-84% of the data and information to the Reliability Coordinator as specified. (R3)
  - 3.4. **Severe:** Provided less than 70% of the data and information to the Reliability Coordinator as specified. (R3)

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

January 2, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement: Comment Periods Open for Balance Resources and Demand Standards and Operate within Interconnection Reliability Operating Limits Standards**

**The Standards Committee (SC) announces the following standards actions:**

**Balance Resources and Demand Standards Posted for 30-day Comment Period (January 2–31, 2007)**

The “Version 1” [Balance Resources and Demand standards](#), an associated implementation plan, and recommended changes to already-approved standards, are all posted for a 30-day comment period. This set of Version 1 standards requires Balancing Authorities and Reliability Coordinators to maintain interconnection frequency within predefined frequency limits under all conditions.

The drafting team modified the standards and implementation plan based on stakeholder comments submitted with the initial ballot of these standards. The drafting team also made changes to bring the standards into conformance with the Reliability Standards Development Procedure, Version 6, which was approved November 1, 2006 by the NERC Board of Trustees, and to bring the standards into conformance with the ERO Rules of Procedure.

Please use this [comment form](#) to provide comments on this set of standards and the associated implementation plan and conforming changes to already approved standards.

**Interconnection Reliability Operating Limits Standards Posted for 45-day Comment Period (January 2–February 15, 2007)**

The “Version 1” [Operate within Interconnection Reliability Operating Limits \(IROL\) standards](#), an associated implementation plan, and recommended changes to already approved standards, are all posted for a 45-day comment period.

This set of Version 1 standards requires the Reliability Coordinator to monitor its wide area, to have plans in place to prevent and mitigate instances of exceeding IROLs, to direct actions in support of operating within IROLs and to specify and collect data needed to support these activities to prevent instability, uncontrolled separation or cascading outages.

The standard drafting team has not made any changes to these standards for two years while waiting for other related standards to be finalized. The changes made to these Version 1 IROL standards bring the standards into conformance with the Reliability Standards Development Procedure, Version 6, which was approved November 1, 2006 by the NERC Board of Trustees, and bring the standards into conformance with the ERO Rules of Procedure.

REGISTERED BALLOT BODY

January 2, 2007

Page Two

Please use this [comment form](#) to provide comments on this set of standards and the associated implementation plan and conforming changes to already approved standards.

### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Prerequisite Approvals

There are no SARs or standards in progress that need to be approved before this set of standards can be approved:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection

### Conforming Changes to Requirements in Already Approved Standards

Many elements contained in the set of proposed ‘Operate within IROL Standards’ address the same or similar performance objectives as requirements in already approved standards. To eliminate duplication and minimize confusion, the following requirements in Version 0 Standards should be revised or retired when the proposed standards are implemented. Justification for these revisions and retirements is provided in the tables on the following pages.

EOP-001-0 — Emergency Operations Planning

- Retire R2

IRO-002-1 — Reliability Coordination – Facilities

- Retire R2 and R6

IRO-003-2 — Reliability Coordination – Wide Area View

- Retire entire standard (R1 and R2)

IRO-004-1 — Reliability Coordination – Operations Planning

- Retire entire standard (R1 through R6)

IRO-005-2 — Reliability Coordination – Current Day Operations

- Retire R1, convert most of R1 into a reference; retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination

- Modify R1.2

TOP-005-1 — Operational Reliability Information

- Retire R1 and R1.1
- Convert Attachment 1 into a reference

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control

- Modify R2 and R4

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Revisions or Retirements to Already Approved Standards**

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>EOP-001-0</b></p> <p>R2. The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.</p>	<p><b>IRO-009-1 R1.</b></p> <p>R1. The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.</li> <li>▪ The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's <math>T_v</math>, which can be shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-002-1</b></p> <p><b>R2.</b> Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall specify and collect the data and information it needs to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. The Reliability Coordinator shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Coordinator, and from entities that provide Real-Time Facility status to the Reliability Coordinator. This includes specifying and collecting data from the following:</p> <ul style="list-style-type: none"> <li>R1.1 Balancing Authorities</li> <li>R1.2 Generator Owners</li> <li>R1.3 Generator Operators</li> <li>R1.4 Interchange Authority</li> <li>R1.5 Load-Serving Entities</li> <li>R1.6 Reliability Coordinators</li> <li>R1.7 Transmission Operators</li> <li>R1.8 Transmission Owners</li> </ul>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-002-1 R2 should be retired.</li> <li>▪ IRO-010-1 R1 requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed requirement is more explicit than the associated requirement in IRO-002-0.</li> </ul>	



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-002-1</b></p> <p><b>R6.</b> Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.</p>	<p><b>IRO-007-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 becomes effective, IRO-002-1 R6 should be retired.</li> <li>▪ IRO-002-1 R6 identifies some, but not all of the parameters to be monitored by the Reliability Coordinator and can be misleading. A list of elements to be monitored (from IRO-005-2) has been converted into a Technical Reference.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-003-2</b></p> <p><b>R1.</b> Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.</p> <p><b>R2.</b> Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.</p>	<p><b>IRO-007-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 becomes effective, IRO-003-2 should be retired.</li> <li>▪ The Transmission Operator, not the Reliability Coordinator, is responsible for operating within System Operating Limits. The Reliability Coordinator is responsible for operating within IROLs.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p><b>R2.</b> Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p>	<p><b>IRO-008-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-004-1 R1 and R2 should be retired.</li> <li>▪ IRO-008 R1 requires the Reliability Coordinator to look at its 'Wide Area' rather than its 'Reliability Coordinator Area' in conducting its Operational Planning Analyses.</li> <li>▪ IRO-004-1 R2 is not measurable and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008, IRO-009, and IRO-010 become effective.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R3.</b> Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.</p> <p><b>R6.</b> If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within Tv up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.</li> <li>▪ IRO-009-1 R1 requires the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>▪ IRO-009-1 R2 includes language that is more explicit than the language in IRO-004-1 R6: ‘results of these studies’ is not as specific as ‘when an assessment of actual or expected system conditions’.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R4.</b> Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.</p> <p><b>R5.</b> Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.</p> <p><b>IRO-005-2</b></p> <p><b>R2.</b> Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information</li> <li><b>R1.2.</b> Mutually agreeable format</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-004-1 R4 and R5 should be retired.</li> <li>▪ IRO-010-1 is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share. The periodicity for collecting the data is addressed in IRO-010-1 R1.3. Only a fraction of the reliability-related data needed by the Reliability Coordinator and shared by the Reliability Coordinator is addressed in IRO-004-1 R4 and R5.</li> <li>▪ When IRO-010-1 becomes effective, IRO-005-2 R2 should be retired. The e-tag system replaced the need for this requirement. In addition, if the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R1.</b> Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:</p> <ul style="list-style-type: none"> <li><b>R1.1</b> Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.</li> <li><b>R1.2</b> Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.</li> <li><b>R1.3</b> Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.</li> <li><b>R1.4</b> System real and reactive reserves (actual versus required).</li> <li><b>R1.5</b> Capacity and energy adequacy conditions.</li> <li><b>R1.6</b> Current ACE for all its Balancing Authorities.</li> <li><b>R1.7</b> Current local or Transmission Loading Relief procedures in effect.</li> <li><b>R1.8</b> Planned generation dispatches.</li> <li><b>R1.9</b> Planned transmission or generation outages.</li> <li><b>R1.10</b> Contingency events.</li> </ul>	<p><b>IRO-007-1</b>  <b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-005-2 R1 should be retired and R1.1 through R1.10 should be converted into a Technical Reference. IRO-005-2 R1 is duplicated with IRO-007-1 R1. The list of parameters to monitor (IRO-005 -2 R1.1 through R1.10) does not identify all parameters to monitor and can be misleading.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R3.</b> As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.</p> <p><b>R5.</b> Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.</p>	<p><b>IRO-009-1</b>  <b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R3, and R5 should be retired.</li> <li>▪ IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a <math>T_v</math> that is much shorter than 30 minutes.</li> <li>▪ IRO-005 R5 can lead the Compliance Monitor to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b></p> <p><b>R9.</b> The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R9 should be modified.</li> <li>▪ IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 focuses includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul>	



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R13.</b> Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.</p>	<p><b>IRO-009-1</b>  <b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.  <b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.  <b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p> <p><b>IRO-007-1</b>  <b>R2.</b> If unanimity cannot be reached on the value for an IROL or its <math>T_v</math>, all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 and IRO-009-1 become effective, IRO-005-2 R13 should be retired.</li> <li>▪ IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.</li> <li>▪ The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-007-1 R2 has a similar requirement that is applicable totally to the Reliability Coordinator.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R14.</b> Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view. The Transmission Service Providers shall respect <del>these</del> SOLs <del>or</del> and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p><b>R16.</b> Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p><b>R17.</b> When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>	<p><b>IRO-009-1</b></p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.</li> <li>▪ IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROLs – R14 implies that the Transmission Service Provider may respect ‘either’ SOLs or IROLs.</li> <li>▪ IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>▪ IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a <math>T_v</math> that is much shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-003-0</b>  <b>R1.</b> Generator Operators and Transmission Operators shall provide planned outage information.</p> <p><b>R1.1</b> Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p><b>R1.2</b> Each Transmission Operator shall provide outage information daily to <del>its Reliability Coordinator</del>, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. <del>The Reliability Coordinator shall establish the outage reporting requirements.</del></p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <p><b>R1.1.</b> List of required data and information  <b>R1.2.</b> Mutually agreeable format  <b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)  <b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-003-0 R1.2 should be modified.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to provide data to other Reliability Coordinators in accordance with the data specifications it has received from those other Reliability Coordinators. Daily outage data is one of the types of data that is expected to be identified on the Reliability Coordinator’s documented data specification since this is data needed to maintain real-time models.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-005-1</b>  <b>R1.</b> Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</p> <p><b>R1.1</b> Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)  <b>R1.1.</b> List of required data and information  <b>R1.2.</b> Mutually agreeable format  <b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)  <b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments..</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-005-1 R1 and R1.1 should be retired.</li> <li>▪ Under IRO-010-1 each Reliability Coordinator must document what data and information it needs and entities must provide that data. The data needed by the Reliability Coordinator is needed for more than just reliability assessments – some of the data is used for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in R1 of TOP-005-1) have data and information needed by the Reliability Coordinator.</li> </ul>	

Version 0 Standards	Proposed Replacement
<p><b>TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data</b></p> <p>This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.</p> <ol style="list-style-type: none"> <li>1. The following information shall be updated at least every ten minutes:               <ol style="list-style-type: none"> <li>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:                   <ol style="list-style-type: none"> <li>1.1.1 Status.</li> <li>1.1.2 MW or ampere loadings.</li> <li>1.1.3 MVA capability.</li> <li>1.1.4 Transformer tap and phase angle settings.</li> <li>1.1.5 Key voltages.</li> </ol> </li> <li>1.2. Generator data.                   <ol style="list-style-type: none"> <li>1.2.1 Status.</li> <li>1.2.2 MW and MVAR capability.</li> <li>1.2.3 MW and MVAR net output.</li> <li>1.2.4 Status of automatic voltage control facilities.</li> </ol> </li> <li>1.3. Operating reserve.                   <ol style="list-style-type: none"> <li>1.3.1 MW reserve available within ten minutes.</li> </ol> </li> <li>1.4. Balancing Authority demand.                   <ol style="list-style-type: none"> <li>1.4.1 Instantaneous.</li> </ol> </li> <li>1.5. Interchange.                   <ol style="list-style-type: none"> <li>1.5.1 Instantaneous actual interchange with each Balancing Authority.</li> <li>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</li> <li>1.5.3 Interchange Schedules for the next 24 hours.</li> </ol> </li> <li>1.6. Area Control Error and frequency.                   <ol style="list-style-type: none"> <li>1.6.1 Instantaneous area control error.</li> <li>1.6.2 Clock hour area control error.</li> <li>1.6.3 System frequency at one or more locations in the Balancing Authority.</li> </ol> </li> </ol> </li> <li>2. Other operating information updated as soon as available.               <ol style="list-style-type: none"> <li>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</li> <li>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</li> <li>2.3. Forecast peak demand for current day and next day.</li> <li>2.4. Forecast changes in equipment status.</li> <li>2.5. New facilities in place.</li> <li>2.6. New or degraded special protection systems.</li> <li>2.7. Emergency operating procedures in effect.</li> <li>2.8. Severe weather, fire, or earthquake.</li> <li>2.9. Multi-site sabotage.</li> </ol> </li> </ol>	<p>New Technical Reference</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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**Notes:**

- When IRO-010-1 becomes effective, 'Attachment 1-TOP-005-0 Electric System Reliability Data' should be translated into a Technical Reference. This data is only a partial list of data and information that the Reliability Coordinator needs to support reliable operations.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-006-1</b></p> <p><b>R2.</b> Each <a href="#">Reliability Coordinator</a>, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.</p> <p><b>R4.</b> Each <a href="#">Reliability Coordinator</a>, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system’s near-term load pattern.</p>	<p><b>IRO-007-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p> <p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information</li> <li><b>R1.2.</b> Mutually agreeable format</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 and IRO-010-1 become effective, TOP-006-1 R2 and R4 should be modified.</li> <li>▪ The Reliability Coordinator’s monitoring requirements are addressed more globally in IRO-007-1. The Reliability Coordinator may not have access to all the transmission data identified in TOP-006-1 R2.</li> <li>▪ The information identified in TOP-006-1 R4 is not inclusive, and is addressed more globally in IRO-010-1 R1 and R3.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Functions that Must Comply with the Requirements in the Standards**

Standard	Functions that Must Comply With the Requirements							
	Reliability Coordinator	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
IRO-007-1 Monitoring the Wide Area	X							
IRO-008-1 Analyses & Assessments	X							
IRO-009-1 Actions to Operate within IROLs	X							
IRO-010-1 Data Specification & Collection	X	X	X	X	X	X	X	X

**Effective Dates**

The standards should all become effective on the first day of the first quarter, three months after regulatory approvals.



## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

**Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

**1. Modified the format of the “Proposed Effective Dates”**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

**2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

7. The latest version of the Reliability Standards Development Procedure requires that each standard include “violation severity levels” rather than “levels of non-compliance.” “Violation severity levels” identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the “Violation Risk Factor” appended to each requirement.) Note that these severity levels are “guidelines” and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with the drafting team’s approach?

I agree the drafting team’s approach

I do not agree with the drafting team’s approach



## Comment Form — IROL Standards

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Comments:

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2

**Comment Form — IROL Standards**

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- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

- I agree with the proposed conforming changes
- I do not agree with the following conforming changes:

Comments:

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

- No known conflicts or unnecessary adverse impacts
- Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations

## Comment Form — IROL Standards

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	Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

**Comment Form — IROL Standards**

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b>	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities

## Comment Form — IROL Standards

Group Comments (Complete this page if comments are from a group.)

**Group Name:** IRC Standards Review Committee

**Lead Contact:** Charles Yeung

**Contact Organization:** SPP

**Contact Segment:** 2

**Contact Telephone:** 832-724-6142

**Contact E-mail:** cyeung@spp.org

Additional Member Name	Additional Member Organization	Region*	Segment*
Alicia Daugherty	PJM	RFC	2
Mike Calimano	NYISO	NPCC	2
Ron Falsetti	IESO	NPCC	2
Matt Goldberg	ISO-NE	NPCC	2
Brent Kingsford	CAISO	WECC	2
Anita Lee	AESO	WECC	2
Steve Myers	ERCOT	ERCOT	2
Bill Phillips	MISO	FRC+	2
		MRO	

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

**Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

**1. Modified the format of the “Proposed Effective Dates”**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

**2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:



- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

(i) We agree with the VRFs for IRO-008, IRO-009 and IRO-010.

(ii) For IRO-007, the VRF for R1 should be HIGH. Real-time monitoring of system conditions to determine if system parameters are within IROLs is critical to ensuring interconnected system reliability. Lack of or insufficient monitoring would expose a system to unreliable operation.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

(i) We agree with the mitigation time horizons for IRO-007, -008 and -010.

(ii) For IRO-009, however, R1 and R2 should also be assigned a Same Day Operation time horizon since "identified in advance of real time" may include day at hand assessments.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

(i) We agree with the violation severity levels for IRO-007 and IRO-008.

(ii) For IRO-009, the violation level is subject to interpretation. For example, "Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs." Does the 95% to 99% range apply to the number of IROLs identified, or to the total time that any IROLs are identified? In other words, is it the percentage of time that for all IROLs identified, there are Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding any IROLs?

To put the violation severity level in a more proper context, the SDT may want to consider putting the range in a "negative sense", i.e., the percentage of time that the requirements are not met, whichever the base of the above interpreted measurements turn out to be.

Better still, we suggest the SDT consider adopting violation severity levels based on the number of times that R1 or R2 is not met, i.e. the number of times that, for any IROLs that are identified in advance of real-time, there lacks operating processes, procedures, or plans that identify actions to prevent or mitigate instances of exceeding these IROLs. This way, assessment of violations can be made much more easily. Further, the severity level will be independent of the total number of IROLs identified, which can eliminate the skewed assessment due to a small of number of IROLs identified in an RC area. For example, under the as written % assessment structure, an RC could be found 0% compliant (and hence assessed a severe violation level) for just one incident of not meeting R1 or R2 if it had only one IROL identified.

(iii) For IRO-010, we agree with the measures as they are based on numbers, not a combination of number and duration. However, the same comment on "negative context" as provided for IRO-009 also apply here. In other words, we suggest turning the % meeting requirements to % failing to meet requirements (hence violation).

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: There are a number of requirements in the posted IRO-005-3 that still hold the RC responsible for being aware of and directing actions when a SOL is being approached or violated. The drafting team's proposed approach would require that corresponding changes be made to IRO-005-3.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:
- IRO-002-1 — RC – Facilities; Retire R6
  - IRO-003-2 — RC – Wide Area View; Retire R1 and R2

## Comment Form — IROL Standards

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- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

(i) We agree that R3, R5 and R9 of IRO-005-2 can be retired. Note that R2 in IRO-009-1 stipulates that "...such that the IROL is relieved within the IROL's Tv." For consistency, we suggest that "within the IROL's Tv" be inserted in R4 to reiterate the time limit requirement of an IROL.

(ii) We agree that part 1 of R13, and R16 and R17 of IRO-005-2 can be deleted.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5

**Comment Form — IROL Standards**

- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

- I agree with the proposed conforming changes
- I do not agree with the following conforming changes:

Comments:

- (i) We agree with retiring R2 of IRO-002-1.
- (ii) We do not agree with removing R1.2 from TOP-003-1. Providing transmission outage information to the RC is essential for ensuring the RC is aware of system changes that may affect interconnected system reliability. There should not be any prejudgment as to which outage has an impact on SOL only.
- (iii) We agree with the proposed deletions/changes to IRO-005-2, TOP-005-1 and TOP-006-1.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

- No known conflicts or unnecessary adverse impacts
- Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities <ul style="list-style-type: none"> <li>- Retire R6</li> </ul> IRO-003-2 — RC – Wide Area View <ul style="list-style-type: none"> <li>- Retire R1 and R2</li> </ul> IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>- Retire R1; Convert R1.1 into a Reference; Modify R13 part 2</li> </ul> TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control <ul style="list-style-type: none"> <li>- Modify R2</li> </ul>
IRO-008	IRO-004-1 — RC – Operations Planning

**Comment Form — IROL Standards**

	- Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

(i) The requirement to monitor, or at least be aware of the impacts on, critical parameters in other RC's areas, as proposed for IRO-007 (M2.1) and IRO-008 (R1) in the previous draft set of standards posted on March 1, 2004, is missing. This monitoring capability is essential for identifying potential reliability impact on other RC areas due to operation plans and real-time operations in one RC area. Note that IRO-010 has this requirement (implicit in R3).

(ii) R2 of IRO-008 requires that Real-Time Assessments be performed at least every 30 minutes. The definition of Real-Time Assessment leaves open how far into the future the assessments must cover.

(iii) R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct" be inserted after "...the Reliability Coordinator shall share its results with" in R3.

(iv) Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is the reason for having these terms defined?

(v) In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay.

(vi) In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document and complete an IROL violation report for each instance of exceeding an IROL for time greater than that limit's Tv. This requirement is missing in the new version. We feel that this requirement should be stated in this standard.

(vii) We do not have any comments on the proposed measures. However, from a process viewpoint, none of the questions asked in this comment form seek concurrence or comments on any of the measures proposed. Since these measures did not exist in any of the current standards, and have been revised since the last draft versions (posted on March 1, 2004), the industry needs to have an opportunity to offer its view.



**Comment Form — IROL Standards**

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input checked="" type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities

**Comment Form — IROL Standards**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** NPCC CP9 Reliability Standards Working Group  
**Lead Contact:** Guy V. Zito  
**Contact Organization:** NPCC  
**Contact Segment:** 10  
**Contact Telephone:** 212-840-1070  
**Contact E-mail:** gzito@npcc.org

Additional Member Name	Additional Member Organization	Region*	Segment*
Kathleen Goodman	ISO-New England	NPCC	2
Greg Campoli	NYISO	NPCC	2
Ron Falsetti	IESO	NPCC	2
Al Adamson	New York State Rel. Council	NPCC	2
David Kiguel	Hydro One	NPCC	1
Jerad Barnhart	NStar	NPCC	1
Ed Thompson	ConEdison	NPCC	1
Ralph Rufrano	New York Power Authority	NPCC	1
Roger Champagne	TransEnergie HydroQuebec	NPCC	1
Murale Gopinathan	Northeast Utilities	NPCC	1
Don Nelson	MA Dept. of Energy and Tele.	NPCC	9
Peter Yost	ConEdison	NPCC	1
John Mosier	NPCC	NPCC	10
James Harwell	NPCC	NPCC	10

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

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**Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

**1. Modified the format of the “Proposed Effective Dates”**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

**2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

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**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

NPCC Participating Members agree with the VRFs for IRO-008, IRO-009 and -010.

NPCC Participating Members suggest that for IRO-007, the VRF for R1 should be HIGH. Real-time monitoring of system conditions to determine if system parameters are within IROLs is critical to ensuring interconnected system reliability. Lack of or insufficient monitoring would expose a system to potential unreliable operation.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

NPCC Participating members agree with the mitigation time horizons for IRO-007, -008 and -010.

For IRO-009, however, R1 and R2 should also be assigned a Same Day Operation time horizon since "identified in advance of real time" may include day at hand assessments.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

NPCC participating members agree with the violation severity levels for IRO-007 and -008.



For IRO-009, the violation level is subject to interpretation. For example, "Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs." Does the 95% to 99% range apply to the number of IROLs identified, or to the total time that any IROLs are identified? In other words, is it the percentage of time that for all IROLs identified, there are Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding any IROLs?

To put the violation severity level in a more proper context, the SDT may want to consider putting the range in a "negative sense", i.e., the percentage of time that the requirements are not met, whichever the base of the above interpreted measurements turn out to be.

Better still, we suggest the SDT consider adopting violation severity levels based on the number of times that R1 or R2 is not met, i.e. the number of times for any IROLs that are identified in advance of real-time, there lacks operating processes, procedures, or plans that identify actions to prevent or mitigate instances of exceeding these IROLs. This way, assessment of violations can be made much more easily. Further, the severity level will be independent of the total number of IROLs identified, which can eliminate the skewed assessment due to a small of number of IROLs identified in an RC area. For example, under the as written % assessment structure, an RC could be found 0% compliant (and hence assessed a severe violation level) for just one incident of not meeting R1 or R2 if it had only one IROL identified.

For IRO-010, we agree with the measures as they are based on numbers, not a combination of number and duration. However, the same comment on "negative context" as provided for IRO-009 also apply here. In other words, we suggest turning the % meeting requirements to % failing to meet requirements (hence violation).

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: There are a number of requirements in the posted IRO-005-3 that still hold the RC responsible for being aware of and directing actions when SOL is being approached or violated. The drafting team's proposed approach would require that corresponding changes be made to IRO-005-3.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:
- IRO-002-1 — RC – Facilities; Retire R6
  - IRO-003-2 — RC – Wide Area View; Retire R1 and R2

## Comment Form — IROL Standards

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- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

EOP-001 R2 requires that a TOP have an emergency load reduction plan for all identified IROLs. The intent of this requirement is for the TOP to be ready to implement load reduction as directed by the RC to mitigate IROL violation when other control actions have been or are in parallel being implemented. Unless this requirement is covered elsewhere, it needs to be retained to assure TOP's readiness, which is in a different context than what the requirements in IRO-009 implies. The RC does not own or operate any load reduction scheme. It must rely on the operators of these schemes - the TOP and DP, as directed by the TOP, to implement load reduction.

NPCC participating members agree with retiring R6 of IRO-004-1, but suggest that a part of R3 in IRO-004-1 which requires that the RC develop action plans in conjunction with the TOPs, be reflected in this standard.

NPCC participating members believe the key requirement in R3 and R5 is for the RC to correct an IROL violation as soon as possible and within 30 minutes. This needs to be retained somewhere, preferably in this standard. Not having a time limit to correct IROL violation can result in an IROL being exceeded for an indefinite period of time, subjecting the system to prolonged risks of instability and potential cascade tripping. The 30 minutes also serves as the threshold that if an IROL violation cannot be corrected by adjusting generation and interchange, reconfiguration, reducing interruptible load, voltage reduction, etc. within that time frame, curtailment of firm load must also be implemented to correct the violation immediately.

NPCC participating members believe the concept of the RC approving outages needs to be retained somewhere in the standards, retiring R9 should be conditional on having this coordination/approval requirement covered by this (IRO-009) or another standard.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

(i) We agree with retiring R2 of IRO-002-1.

(ii) We do not agree with removing R1.2 from TOP-003-2. Providing transmission outage information to the RC is essential for ensuring the RC is aware of system changes that may affect interconnected system reliability. There should not be any prejudice as to which outage has an impact on SOL only.

(iii) We agree with the proposed deletions/changes to IRO-005-2, TOP-005-1 and TOP-006-1.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

**Comment Form — IROL Standards**

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Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

R2 of IRO-008 requires clarification or the definition of Real-Time Assessments needs to be revised to capture that an assessment needs to be done every thirty minutes and specific made as to how far into the future the assessments must cover.

R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct" be inserted after "...the Reliability Coordinator shall share its results with" in R3. This may clarify the IRO-008 standard but may introduce some redundancy with IRO-009 R3 and R4.

Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is the reason for having these terms defined?

In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay perhaps specifying a timeframe in the Requirements section R4. Also missing is the requirement to document, with a complete violation report, whenever an IROL violation has been exceeded beyond Tv.

In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document IROL violation incidents. This requirement is missing in the new version. NPCC Participating members believe that this requirement should be stated in this standard.

NPCC participating members have also expressed concern about these same standards appearing in NERC's Reliability Coordinator SAR project. Coordination of the comments is a major concern especially when the standards will be under revision here and also in that project concurrently.

## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

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During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

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(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments: The project in question should have been posted with the package. The quality of responses to this item will likely be impaired as many will not have reviewed the intent of the plan.

We agree that clear communications are important and should be part of an operators overall training program. We have some concern about developing measures for the sake of having measures, particularly when they appear to require significant administration to track.

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

## Comment Form — IROL Standards

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No

Comments: Since the drafting team is not yet formed and has not seen the final product, it is premature to set a short implementation date.

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments: We strongly disagree with the violation severity levels of attribute (yes/no go/no-go) requirements being arbitrarily placed in the Severe category. This places late reports in the same category as failure to correct an IROL. We don't treat jaywalking the same as grand theft. The sanctions matrix needs to be changed to have another level for attribute requirements. The sanctions need to be based on impact to reliability.

We also disagree with the default approach to assigning severity levels to scalable standards (only 5% in the Low area, 70% of observations in the Severe category). This is the equivalent as applying the following highway speeding rules to cars that have a typical top end of 100MPH:

65 MPH or less	Pass
66 MPH	Low
67-69 MPH	Moderate
70-74 MPH	High
75-100 MPH or higher	Severe

Scalable standards should be assigned severity levels that approach quartiles of the observed or expected range of performance.

This approach to assigning violation severity levels to attribute and scalable requirements doesn't appear to have been presented for official comment in any stakeholder forum.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments: The meaning of Operations Assessment needs to be clarified. There is no indication of the relative impacts the drafting team considered for each mitigation time horizon. I would assume that a violation of a standard in the Real-Time Operations horizon would be considered worst than a violation in the Operations Planning Horizon. If this is the case, the standard needs to specify this. How does the team see Operations Assessment horizon fitting in?

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance."

## Comment Form — IROL Standards

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“Violation severity levels” identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the “Violation Risk Factor” appended to each requirement.) Note that these severity levels are “guidelines” and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: The compliance percentage leaves gaps from 94-95% and from 84-85%. What is the justification for these percentages?

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with the drafting team’s approach?

I agree the drafting team’s approach

I do not agree with the drafting team’s approach

Comments:

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: Requirement R11 in Standard IRO-005-3 contradicts question 8 in the comment form. It requires the RCs to notify TPs of "SOLs and IROLs within its wide-area view". Question 8 recognizes that RCs may not have all the information for SOLs so how can they be held accountable to communicate it? This requirement needs to be eliminated.

## Comment Form — IROL Standards

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10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: Transmission operators will not have to communicate outage information to the RC with these changes. The requirement to communicate the outage to the RC should not be removed from the transmission operator.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please



**Comment Form — IROL Standards**

identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

## Comment Form — IROL Standards

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I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments: IRO-007-1 - Tv is a term that is not defined. Measures do not specify if temporary loss of ICCP or telemetry is an exception or if it is still considered a violation. It should not be considered a violation.

IRO-008-1 - R2 requires that Real-Time Assessments be performed at least every 30 minutes. The definition of Real-Time Assessment leaves open how far into the future the assessments must cover. R3 requires sharing of results to prevent or mitigate exceeding an IROL. It seems like this should require an RC directive to correct the situation. Violation severities do not address temporary loss of ICCP, telemetry or state estimation. They should not be violations.

IRO-009-1 - Two new terms are defined for inclusion in the glossary: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in the standard. Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. Delay is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay. Additionally, we wonder how will the ERO track a given percent of "IROLs identified in advance of real-time" against the number of operating procedures?

IRO-010-1 - Does R3 create the requirement for a entity to add metering if it does not already exist at a location, if a measurement is requested? This needs to be made clear. Data anomalies such as those caused by a bad RTU are not addressed and need to be made exceptions in the violations severity section.

While we agree with the concept of consolidating the IROL-related standards, there is more work to do. Requirements regarding IROLs can be boiled down to:

1. Have IROLs pre-defined (preparedness).
2. Train and prepare for IROLs (preparedness).
3. Update limits based on conditions (performance).
4. Monitor for and respond quickly to IROLs and correct them within 30 minutes (performance).
5. Communicate reaching IROLs to others (performance).
6. Report violations of the IROL standard (administrative).

The acronym IROL shows up 168 times in the present standards. The vast majority of these are restatements of the 6 core requirements in different standards or explanatory information that should not be assigned risk factors or measures.

## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Jason Shaver	
Organization:	American Transmission Co.	
Telephone:	262 506 6885	
E-mail:	jshaver@atcllc.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input checked="" type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.



**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments: ATC agrees with the decision to combine standards IRO-010 and IRO-011 into a single standard.

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments: ATC agrees with the decision to combine standards IRO-009 and IRO-012 into a single standard.

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments: ATC believes that all standards and conforming changes should become effective the first day of the first quarter, six months after regulatory approvals.



## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: Many of the requirements need to be clarified before we can determine the appropriateness of the violation severity levels.

See our comments under question 15.

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: ATC does not agree with the proposed modifications to existing NERC standards. It's our opinion that Reliability Coordinators should monitor both SOLs and IROLs within their area. The Reliability Coordinators provide an additional level of system oversight that ensures the reliable operations of the bulk power system. A strict interpretation by Reliability Coordinators would lead them to only monitor pre-determined IROLs and they would be unable to determine if an SOL becomes an IROL in real-time.

ATC does not believe that the proposed changes to existing standards have anything to do with these standards. The proposed standards are not replacing the requirements in the existing standards but are only adding on new requirements that address IROLs. The SDT is overstepping the spirit of the IROL SAR and seems to be adjusting existing standards for some unexplained reason. If the SDT believes that these changes are appropriate then they should sponsor a SAR and allow for full industry participation.

It's our opinion that the propose changes to existing standards will leave that bulk power system in a less reliable state, and we ask that the SDT abandon this effort and move the proposed changes to a SAR. Once in a SAR the industry will be able to better exam the effects of the changes.

Lastly ATC believes that changes in monitoring of SOL may impact the ability of Reliability Coordinators to call TLRs. If they are not required to monitor SOLs then identification will be the sole responsibility of Transmission Operators with no confirmation from RCs before a TLR is started.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: IRO-007 states that Reliability Coordinators should monitor IROLs within their area.

ATC does not believe that the changes to the four listed requirements have anything to do with IRO-007. In other words IRO-007 is not replacing the existing requirements, therefore the SDT has no authority to delete these requirements.

## Comment Form — IROL Standards

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It's ATC opinion that the SDT should only modify existing requirements that are in direct alignment with their work. In other words they should only alter those existing requirements that are being replaced with new requirements.

If the SDT disagrees with ATC then they need to explain how IRO-007 is replacing the above listed requirements.

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: If Reliability Coordinators only have to monitor IROLs then they will have no ability to identify a SOL that becomes an IROL is real-time. It is the responsibility of the Reliability Coordinators to provide oversight of the bulk power system, therefore insuring reliable operations.

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: ATC does not believe that a Reliability Coordinator will be able to identify an SOL that becomes an IROL in real-time if they are not required to monitor SOLs. Additionally ATC does not see the connection between IRO-009 and these three existing standards. IRO-009 is not replacing these requirements therefore they should not be changed.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2

**Comment Form — IROL Standards**

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- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

- I agree with the proposed conforming changes
- I do not agree with the following conforming changes:

Comments: Please see our comments to question 8.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

- No known conflicts or unnecessary adverse impacts
- Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities

**Comment Form — IROL Standards**

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	- Retire R2
IRO-004-1 — RC – Operations Planning	- Retire R4, R5
IRO-005-2 — RC – Current Day Operations	- Retire R2
TOP-003-0 — Planned Outage Coordination Modify R1.2	
TOP-005-1 — Operational Reliability Information	- Retire R1, R1.1; Convert Attachment A to a Reference
TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control	- Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments: These four standards should be voted on in a single ballot. The nature of this set of standards and the proposed modification to existing standards are such that a failure of one would cause a major disconnection in NERC standards. For this reason ATC strongly requests that the four standards be balloted as one.

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments: This effort must produce a clear definition of what an IROL is and the outcome being avoided by classifying an SOL as an IROL. The definition should include both Real-Time Operations and planning horizon perspectives. There is wide discretion between what everyone believes an IROL is and what events could reasonably be predicted to identify a triggering event that should be classified as an IROL. A clear definition is required in order to identify an IROL in Real-Time Operations and planning studies.

IRO-007 Requirement R2

Has the group discussed the possible situation in which the RCs do not agree that an IROL exists? This requirement gives the impression that an IROL has been agreed to by the RCs but the limit and/or Tv is in dispute. Because the definition of IROL is subjective two RCs could have variations of what SOLs should be classified as IROLs in Real-time.

IRO-010

Requirements 1.1, 1.3 and 1.4 seem to be a fill in the blank requirements for the RCs. This group should develop the data specification requirements.

Requirement 1.2 should be deleted and replaced with the following:

Industry standard protocol or mutually agreeable format



**Comment Form — IROL Standards**

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Ed Davis	
Organization:	Entergy Services, Inc	
Telephone:	504-576-3029	
E-mail:	edavis@entergy.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

IRO-008-1 R3 has two conditions: one the results of an Operational Planning Analysis, and one the results of a Real-Time Assessment. The Violation Risk Factor should be different for each of these two conditions. The VRF for the results of an Operational Planning Analysis should be MEDIUM, while the VRF for the results of a Real-Time Assessment should be HIGH.

IRO-010-1 R1 requires the development of a documented specification for data and information while R2 requires distribution of that specification. Both R1 and R2 have VRFs of Medium. We suggest these two requirements be changed to LOWER. The development and distribution of a data specification is not a High or Medium risk factor.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

IRO-008-1 R3 has two conditions: one the results of an Operational Planning Analysis, and one the results of a Real-Time Assessment. The Mitigation Time Horizon should be different for each of these two conditions. The MTH for the results of an Operational Planning Analysis should be Operations Planning, while the MTH for the results of a Real-Time Assessment should be Real-Time Operations.



IRO-010-1 R1 requires the development of a documented specification for data and information while R2 requires distribution of that specification. Both R1 and R2 have MTHs of Operations Planning. We suggest these two requirements be changed to Long-term Planning. The development and distribution of a specification should be developed and distributed long before it is needed.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include “violation severity levels” rather than “levels of non-compliance.” “Violation severity levels” identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the “Violation Risk Factor” appended to each requirement.) Note that these severity levels are “guidelines” and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

The VSLs in IRO-009 and IRO-010 have gaps between the low end of LOW (e.g. 95%) and the high end of MODERATE (e.g. 94%) with a similar gap in other VSLs. Why is there this gap? If the argument is that the ranges are whole numbers then it may be OK. However, it seems there should not be a gap and we suggest closing those gaps by writing the VSL with - greater than and equal to - and - less than - specifications.

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with the drafting team’s approach?

I agree the drafting team’s approach

I do not agree with the drafting team’s approach

Comments:

We agree that the RC should not be held responsible to identify the cause of any actual or potential SOL for which he is not monitoring the information. However, if he is monitoring the parameters associated with a SOL he does have an obligation to act on that information and should be held accountable. Therefore, a blanket reprieve for not acting on known information is not acceptable.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

IRO-007-1 R1 contains the requirement that the RC - ... perform Real-Time Monitoring of system operating parameters ... Given the propensity of industry participants to re-interpret meanings to their own interpretation, we strongly suggest the term CONTINUOUS be added to the requirement so R1 would read - ... perform CONTINUOUS Real-Time Monitoring of system operating parameters ...

We believe there should be a minimum set of information required to be monitored by the Reliability Coordinator and that minimum set should be specified in the standards. This version, V7, of these IRO standards would remove all specification of any parameters to be monitored by the RC and place a list of some information in a Technical Reference. In addition, it is our understanding that Technical References and information contained in those References are not mandatory on the industry. The reason given for not including the list in the standard is "The list of parameters to monitor (IRO-005-2 R1.1 through R1.10) does not identify all parameters to monitor and can be misleading." The wording in IRO-005-2 R1 contains the phrase INCLUDING BUT NOT LIMITED TO THE FOLLOWING. A person must have some objective in mind other than conforming to the standard if he claims to not understand the meaning of, or can be misled by, the phrase INCLUDING BUT NOT LIMITED TO THE FOLLOWING.

Therefore, we suggest deleting the Technical Reference and adding the following list and common English usage phrases back into the standards at the end of IRO-007-1 R1:

THOSE SYSTEM OPERATING PARAMETERS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

R1.1 Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.

R1.2 Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.

R1.3 Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.

R1.4 System real and reactive reserves (actual versus required).

R1.5 Capacity and energy adequacy conditions.

R1.6 Current ACE for all its Balancing Authorities.

R1.7 Current local or Transmission Loading Relief procedures in effect.

R1.8 Planned generation dispatches.

R1.9 Planned transmission or generation outages.

R1.10 Contingency events.

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

## Comment Form — IROL Standards

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Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

IRO-009-1 R1 requires the RC to develop one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs. IRO-004-1 R3 (to be deleted) requires the RC to develop action plans - IN CONJUNCTION WITH ITS TRANSMISSION OPERATORS AND BALANCING AUTHORITIES - (IRO-004-1 R3: Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.)

IRO-005-2 R16 (to be retired) requires the RC to discuss options to mitigate IROLs which also is not include in these revised draft standards.

The reasoning given in the Implementation Plan for not requiring the RC to develop - in conjunction - the Operating Process, Procedures or Plans with TOPs and BAs is that - under some conditions the Reliability Coordinator may not have time to 'coordinate' the development of these plans with all of its Transmission Operators and Balancing Authorities -. We suggest the RC be required to coordinate the development of all Operating Process, Procedures or Plans with TOPs and BAs. Only in the rarest of instances when a sudden system change requires the RC to develop a new Operating Process, Procedure or Plan in real-time may RCs be exempt from developing these Operating Process, Procedures or Plans in conjunction with TOPs and BAs.

In addition, there are several requirements on TOPs and BAs (for example see TOP-002-2, TOP-004-1 R1, TOP-008-1 R1 and R2) for them to plan and operate to meet all IROLs. The TOPs and BAs must be informed of the IROLs in order to plan and operate around them.

RCs should continue to develop processes, procedures or plans in conjunction with TOPs and BAs as required in the existing IRO-004 R3, and discuss options to mitigate IROLs as required in IRO-005-2 R16. The requirement to develop in - conjunction with - should be put into IRO-009-1 R1.

Therefore we suggest IRO-009-1 R1 be changed from - ... PLANS THAT .. - to - ... PLANS DEVELOPED IN CONJUCTION WITH TRANSMISSION OPERATORS AND BALANCING AUTHORITIES THAT ... - .

IRO-009-1 R2 requires the RC to develop one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to mitigate the magnitude and duration of exceeding all IROLs. The discussion above for IRO-009-1 R1 applies here. Therefore we suggest IRO-009-1 R2 be changed from - ... PLANS THAT .. - to - ... PLANS DEVELOPED IN CONJUCTION WITH TRANSMISSION OPERATORS AND BALANCING AUTHORITIES THAT ... - .

IRO-005-2 R5 (to be deleted) requires the RC to identify the cause of any potential or actual IROL violations. That requirement is not in these new IROs. We suggest that requirement be added back in to IRO-009-1 R3 (addressing an assessment of actual or expected system conditions) by changing - .. shall implement one or more .. - to - .. shall IDENTIFY THE CAUSE OF ANY POTENTIAL OR ACTUAL IROL VIOLATIONS and shall implement one or more ...

RO-005-2 R5 (to be deleted) requires the RC to identify the cause of any potential or actual IROL violations. That requirement is not in these new IROs. We suggest that requirement be added back in to IRO-009-1 R4 (addressing actual system conditions) by changing - .. shall, without delay, act or direct others .. - to - .. shall, without delay, IDENTIFY THE CAUSE OF EXCEEDING AN IROL, AND SHALL act or direct others ...

## Comment Form — IROL Standards

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12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

IRO-010-1 R3 contains the requirement that the RC provide data and information to other RCs. However, IRO-015-1 R3 already contains that requirement: IRO-015-1 R3. The Reliability Coordinator shall provide reliability-related information as requested by other Reliability Coordinators.

Therefore either the Reliability Coordinator should be deleted from the list of entities specified in IRO-010-1 R3, or, IRO-015 -1 R3 should be deleted from that standard.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for

**Comment Form — IROL Standards**

IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

The industry has determined that NERC reliability standards need to be more definitive as to which entities the standards are Applicable. Therefore, Entergy strongly suggests that all Applicability assignments in ALL standards and requirements be changed to be very specific. Therefore, we suggest the Applicability of each standard be changed to - ALL REGISTERED xxx, NO ADDITIONAL CONDITIONS NOR LIMITATIONS WILL BE ADDED TO THE APPLICABILITY OF THIS STANDARD, where xxx is the functional entity to whom the standard applies. Therefore, the Applicability of IRO-007-1 should not be Reliability Coordinator but should be changed to - ALL REGISTERED RELIABILITY COORDINATORS, NO ADDITIONAL CONDITIONS NOR LIMITATIONS WILL BE ADDED TO THE APPLICABILITY OF THIS STANDARD. The Applicability of all other standards should be configured in a similar manner for all entities to whom that particular standard applies.

Version 6 of IRO-009 contained the requirement:

R1.4. The reliability coordinator shall document each instance of exceeding an IROL and shall document and complete an IROL violation report for each instance of exceeding an IROL for time greater than that limit's Tv. The reliability coordinator shall file each IROL violation report with its compliance monitor within five business days of the initiation of the event.

This requirement that a RC must document exceeding an IROL and report each IROL violation has not been included in the current draft, V7, of any of these drafts IRO-007 - 010 and does not seem to be required in any other NERC standards. We suggest it be included in IRO-009-1 as R5 along with appropriate Measures, Compliance requirements, VSL, VRF, and MTH.



## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments: Since IRO-013 is not approved, then IRO-004-1 R7 should not be deleted until replaced. The redlined IRO-004-2 shows the entire standard to be retired.

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach



## Comment Form — IROL Standards

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Comments: FAC-011-1 R1 (which is effective 10/01/2007) requires the Reliability Coordinator to have a documented methodology for use in developing SOLs within its Reliability Coordinator Area. TOP-007-0 R4 requires the Reliability Coordinator to evaluate actions taken to resolve SOL violation, and if the actions taken are not appropriate or sufficient, direct actions required to return the system to within limits. Existing IRO-002-1 R5 and R8 (which still exist in the proposed IRO-002-2 as R4 and R6) require the Reliability Coordinator to have detailed real-time monitoring to ensure that potential or actual SOL violations are identified. These requirements require the Reliability Coordinator to be aware of all SOLs. We agree with the concept to clarify the accountabilities between the Transmission Operator and the Reliability Coordinator for real-time actions relative to SOLs, but it is inaccurate to state that the Reliability Coordinator is not required to see all SOLs. The Transmission Operator should be proactive in mitigating SOL violations (real-time and calculated first contingency), in coordination with the Reliability Coordinator. The Reliability Coordinator must be aware of all SOL violations in order to direct action when needed to do so.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: See comment in # 8,

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: IRO-004-1 R2 should be included in the Technical Reference. The Technical Reference document should be provide (for information purposes) as part of the document package for this review of proposed requirement changes.

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2

## Comment Form — IROL Standards

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- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: The modification of IRO-005-2 R14 to retire part 1, as stated on page 14 (in the Notes section) is not reflected in the redlined version of IRO-005-3. This change should be made in the redlined version.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: Agree to retire IRO-005-2 R2, however redlined version of IRO-005-3 does not show deletion of the entire R2 (which become R1 in IRO-005-3.)

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

**Comment Form — IROL Standards**

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
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I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

## Comment Form — IROL Standards

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Kathleen Goodman	
Organization:	ISO New England	
Telephone:	(413) 535-4111	
E-mail:	kgoodman@iso-ne.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
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<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
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<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
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- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

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**2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

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***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

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**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

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The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

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The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

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The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

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The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:



- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
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### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

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*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

ISO New England agree with the VRFs for IRO-008, IRO-009 and -010.

ISO New England suggests that for IRO-007, the VRF for R1 should be HIGH. Real-time monitoring of system conditions to determine if system parameters are within IROLs is critical to ensuring interconnected system reliability. Lack of or insufficient monitoring would expose a system to potential unreliable operation.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

ISO New England agrees with the mitigation time horizons for IRO-007, -008 and -010.

For IRO-009, however, R1 and R2 should also be assigned a Same Day Operation time horizon since "identified in advance of real time" may include day at hand assessments.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

ISO New England agrees with the violation severity levels for IRO-007 and -008.

For IRO-009, the violation level is subject to interpretation. For example, "Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs." Does the 95% to 99% range apply to the number of IROLs identified, or to the total time that any IROLs are identified? In other words, is it the percentage of time that for all IROLs identified, there are Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding any IROLs?

To put the violation severity level in a more proper context, the SDT may want to consider putting the range in a "negative sense", i.e., the percentage of time that the requirements are not met, whichever the base of the above interpreted measurements turn out to be.

Better still, we suggest the SDT consider adopting violation severity levels based on the number of times that R1 or R2 is not met, i.e. the number of times for any IROLs that are identified in advance of real-time, there lacks operating processes, procedures, or plans that identify actions to prevent or mitigate instances of exceeding these IROLs. This way, assessment of violations can be made much more easily. Further, the severity level will be independent of the total number of IROLs identified, which can eliminate the skewed assessment due to a small of number of IROLs identified in an RC area. For example, under the as written % assessment structure, an RC could be found 0% compliant (and hence assessed a severe violation level) for just one incident of not meeting R1 or R2 if it had only one IROL identified.

For IRO-010, we agree with the measures as they are based on numbers, not a combination of number and duration. However, the same comment on "negative context" as provided for IRO-009 also apply here. In other words, we suggest turning the % meeting requirements to % failing to meet requirements (hence violation).

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: There are a number of requirements in the posted IRO-005-3 that still hold the RC responsible for being aware of and directing actions when SOL is being approached or violated. The drafting team's proposed approach would require that corresponding changes be made to IRO-005-3.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:
- IRO-002-1 — RC – Facilities; Retire R6
  - IRO-003-2 — RC – Wide Area View; Retire R1 and R2

## Comment Form — IROL Standards

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- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

EOP-001 R2 requires that a TOP have an emergency load reduction plan for all identified IROLs. The intent of this requirement is for the TOP to be ready to implement load reduction as directed by the RC to mitigate IROL violation when other control actions have been or are in parallel being implemented. Unless this requirement is covered elsewhere, it needs to be retained to assure TOP's readiness, which is in a different context than what the requirements in IRO-009 implies. The RC does not own or operate any load reduction scheme. It must rely on the operators of these schemes - the TOP and DP, as directed by the TOP, to implement load reduction.

ISO New England agrees with retiring R6 of IRO-004-1, but suggest that a part of R3 in IRO-004-1 which requires that the RC develop action plans in conjunction with the TOPs, be reflected in this standard.

ISO New England believes the key requirement in R3 and R5 is for the RC to correct an IROL violation as soon as possible and within 30 minutes. This needs to be retained somewhere, preferably in this standard. Not having a time limit to correct IROL violation can result in an IROL being exceeded for an indefinite period of time, subjecting the system to prolonged risks of instability and potential cascade tripping. The 30 minutes also serves as the threshold that if an IROL violation cannot be corrected by adjusting generation and interchange, reconfiguration, reducing interruptible load, voltage reduction, etc. within that time frame, curtailment of firm load must also be implemented to correct the violation immediately.

ISO New England believes the concept of the RC approving outages needs to be retained somewhere in the standards, retiring R9 should be conditional on having this coordination/approval requirement covered by this (IRO-009) or another standard.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

(i) We agree with retiring R2 of IRO-002-1.

(ii) We do not agree with removing R1.2 from TOP-003-2. Providing transmission outage information to the RC is essential for ensuring the RC is aware of system changes that may affect interconnected system reliability. There should not be any prejudgment as to which outage has an impact on SOL only.

(iii) We agree with the proposed deletions/changes to IRO-005-2, TOP-005-1 and TOP-006-1.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

**Comment Form — IROL Standards**

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

R2 of IRO-008 requires clarification or the definition of Real-Time Assessments needs to be revised to capture that an assessment needs to be done every thirty minutes and specific made as to how far into the future the assessments must cover.

R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct" be inserted after "...the Reliability Coordinator shall share its results with" in R3. This may clarify the IRO-008 standard but may introduce some redundancy with IRO-009 R3 and R4.

Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is the reason for having these terms defined?

In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay perhaps specifying a timeframe in the Requirements section R4. Also missing is the requirement to document, with a complete violation report, whenever an IROL violation has been exceeded beyond Tv.

In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document IROL violation incidents. This requirement is missing in the new version. NPCC Participating members believe that this requirement should be stated in this standard.

We also have concern about these same standards appearing in NERC's Reliability Coordinator SAR project. Coordination of the comments is a major concern especially when the standards will be under revision here and also in that project concurrently.



## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

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##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

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- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

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- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
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**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

7. The latest version of the Reliability Standards Development Procedure requires that each standard include “violation severity levels” rather than “levels of non-compliance.” “Violation severity levels” identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the “Violation Risk Factor” appended to each requirement.) Note that these severity levels are “guidelines” and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with the drafting team’s approach?

I agree the drafting team’s approach

I do not agree with the drafting team’s approach



## Comment Form — IROL Standards

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Comments:

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2

**Comment Form — IROL Standards**

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- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations

**Comment Form — IROL Standards**

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	Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

**Comment Form — IROL Standards**

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Richard Kafka	
Organization:	Pepco Holdings, Inc.	
Telephone:	301-469-5274	
E-mail:	rjkafka@pepcoholdings.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:



- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments: PHI supports the comments of the IRC Standards Review Committee. In support of the drafting team, they will not be repeated in this comment form.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: PHI supports the comments of the IRC Standards Review Committee. In support of the drafting team, they will not be repeated in this comment form.

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

## Comment Form — IROL Standards

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I do not agree with the drafting team's approach

Comments: PHI supports the comments of the IRC Standards Review Committee. In support of the drafting team, they will not be repeated in this comment form.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

**Comment Form — IROL Standards**

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12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: PHI supports the comments of the IRC Standards Review Committee. In support of the drafting team, they will not be repeated in this comment form.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2

**Comment Form — IROL Standards**

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IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
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IRO-010	IRO-002-1 — RC – Facilities - Retire R2
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	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
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I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments: PHI supports the comments of the IRC Standards Review Committee. In support of the drafting team, they will not be repeated in this comment form.

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Robert Coish	
Organization:	Manitoba Hydro	
Telephone:	204-487-5479	
E-mail:	rgcoish@hydro.mb.ca	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input checked="" type="checkbox"/> MRO	<input checked="" type="checkbox"/>	3 — Load-serving Entities
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- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
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### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
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### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments: MH endorses the MRO comments: While the description of requirements captures the essence of preventing and mitigating IROLs, it would be helpful for clarity to change the title of the revised IRO-009-1 to Reliability Coordinator actions to operate within IROLs and plans to prevent/mitigate IROLs.

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments: MH endorses MRO comments: Project 2007-02 should have been included with this package for us to consider. The MRO is also concerned that there is a general trend to develop too many requirements and measures, which would become administratively burdensome to the ERO and the entities that must comply.

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments: MH endorses MRO comments: It is difficult to prescribe one time window such as, three months after regulatory approvals. Different Standards might require different implementation times to allow the responsible entities to become fully compliant. For example, for those Standards that require equipment installation, it would take more than 3 months to satisfy the compliance requirements. Moreover, the Standards drafting team is the appropriate body to stipulate how much time is needed after regulatory approvals to become compliant.

5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments: MH endorses MRO comments: It is difficult to prescribe one time window such as, three months after regulatory approvals. Different Standards might require different implementation times to allow the responsible entities to become fully compliant. For example, for those Standards that require equipment installation, it would take more than 3 months to satisfy the compliance requirements. Moreover, the Standards drafting team is the appropriate body to stipulate how much time is needed after regulatory approvals to become compliant.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments: Mitigation Time Horizons are described near the top of this comment form.

The description of the Mitigation Time Horizons states: The ERO Rules of Procedure include the use of mitigation time horizons as one element used to determine the size of sanctions.

Can the drafting team inform the Registered Ballot Body where the ERO definition of Mitigation Time Horizons can be found along with documentation describing how the mitigation time horizons will be used in determining penalties. Mitigation Time Horizons are not listed as a Performance Element of a Reliability Standard in the Reliability Standards Development Procedure Version 6 adopted by the NERC BOT on November 1, 2006. As such, it does not seem appropriate to include them in any Reliability Standards.

The comment form description of Mitigation Time Horizons further states The drafting team used the following guidelines in developing mitigation time horizons for each requirement, whereas the final statement in the description of the Violation Risk Factors states The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure. Like the Violation Risk Factors, the categories of Mitigation Time Horizons should also be approved and incorporated into the Reliability Standards Development Procedure in order to ensure that the definitions are consistent for all NERC Reliability Standards.

The MH cannot vote to approve a standard that includes Mitigation Time Horizons until the drafting team can produce ERO documented definitions and the documented manner in which the Mitigation Time Horizons will be used to determine penalties.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include “violation severity levels” rather than “levels of non-compliance.” “Violation severity levels” identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the “Violation Risk Factor” appended to each requirement.) Note that these severity levels are “guidelines” and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: endorses the MRO comments: The way the Violation Severity levels are spelled out, it again appears to be arbitrary cut offs, and especially the High and Severe Violation Severity Levels have to be tightly defined so that the entities would know what actions to take to be compliant.

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with the drafting team’s approach?

I agree the drafting team’s approach

I do not agree with the drafting team’s approach

Comments: However, the drafting team should ensure that where the RC's accountability has been limited or removed regarding real-time actions relative to SOLs, the accountability of the appropriate entity, e.g. transmission operator is covered by or added to another standard. This will ensure no reliability gaps are created.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:



## Comment Form — IROL Standards

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Comments: If we are removing the monitoring of SOL from the RC's responsibility how can IRO-005-0 R11 be true. The RC can not make known to Transmission Service Providers all SOLs. This Requirement needs to be edited. Possibly along the lines of:

R11. Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, all IROLs and known SOLs within its wide-area view. The Transmission Service Providers shall respect IROLs and all known SOLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.

Also, MH endorses the MRO comments: The MRO agrees with the SDT in striking the first part of IRO-005-2 since it is already covered in FAC-014-R5.1. However, the MRO does not agree with the proposed revision to the second part that states: The Transmission Service Providers shall respect SOLs and IROLs in accordance with filed tariffs..... Since the RC may not know all SOLs and IROLs, it is not possible for the RC to make the TSP aware of what the RC itself does not know. The MRO recommends the SDT amend the proposed revision to state: The Transmission Service Provider shall respect all KNOWN SOLs and IROLs in accordance with.....

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: General agreement with the approach, however, the new definition, Operational Planning Analysis, is a very high level definition such that R1 in IRO-008 may be very difficult to measure.

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: MH does not agree with the removal of required coordination between the RC and the Transmission Operator and Balancing Authority. This approach is moving in a direction to undermine reliability.

**Comment Form — IROL Standards**

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12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2

**Comment Form — IROL Standards**

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	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments: MH appreciates the effort the drafting team put into the development of these standards and that the material has been organized to facilitate review and comment.

MH also endorses the MRO comments: The MRO requests clarification as to why the following two definitions were added in IRO-009-1 and never used: Interconnection Reliability Operating Limit Event, and Interconnection Reliability Operating Limit Event Duration. If terms are specifically added to a standard, it is expected that the terms will be used in the standard. If the new terms are not to be used in the standard where they are originally defined, it would appear that the new terms are not needed and should be struck from the standard until a such time that they are to be used.

The MRO requests the definition of the term Delay, as it is used in in IRO-009-1-R4. Is the RC considered in violation if it does not act with in one minute? If it does not act with in two-minutes. Leaving this term undefined will result in arbitrary enforcement of this standard

## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Roger Champagne	
Organization:	Hydro-Québec TransÉnergie	
Telephone:	514 289-2211; X 2766	
E-mail:	champagne.roger.2@hydro.qc.ca	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

**Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

**1. Modified the format of the “Proposed Effective Dates”**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

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**A Lower Risk Factor requirement** is administrative in nature and

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The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

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*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

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Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

We agree with the VRFs for IRO-008, IRO-009 and -010.

We suggest that for IRO-007, the VRF for R1 should be HIGH. Real-time monitoring of system conditions to determine if system parameters are within IROLs is critical to ensuring interconnected system reliability. Lack of or insufficient monitoring would expose a system to potential unreliable operation.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

We agree with the mitigation time horizons for IRO-007, -008 and -010.

For IRO-009, however, R1 and R2 should also be assigned a Same Day Operation time horizon since "identified in advance of real time" may include day at hand assessments.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

We agree with the violation severity levels for IRO-007 and -008.

For IRO-009, the violation level is subject to interpretation. For example, "Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs." Does the 95% to 99% range apply to the number of IROLs identified, or to the total time that any IROLs are identified? In other words, is it the percentage of time that for all IROLs identified, there are Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding any IROLs?

To put the violation severity level in a more proper context, the SDT may want to consider putting the range in a "negative sense", i.e., the percentage of time that the requirements are not met, whichever the base of the above interpreted measurements turn out to be.

Better still, we suggest the SDT consider adopting violation severity levels based on the number of times that R1 or R2 is not met, i.e. the number of times for any IROLs that are identified in advance of real-time, there lacks operating processes, procedures, or plans that identify actions to prevent or mitigate instances of exceeding these IROLs. This way, assessment of violations can be made much more easily. Further, the severity level will be independent of the total number of IROLs identified, which can eliminate the skewed assessment due to a small of number of IROLs identified in an RC area. For example, under the as written % assessment structure, an RC could be found 0% compliant (and hence assessed a severe violation level) for just one incident of not meeting R1 or R2 if it had only one IROL identified.

For IRO-010, we agree with the measures as they are based on numbers, not a combination of number and duration. However, the same comment on "negative context" as provided for IRO-009 also apply here. In other words, we suggest turning the % meeting requirements to % failing to meet requirements (hence violation).

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: There are a number of requirements in the posted IRO-005-3 that still hold the RC responsible for being aware of and directing actions when SOL is being approached or violated. The drafting team's proposed approach would require that corresponding changes be made to IRO-005-3.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:
- IRO-002-1 — RC – Facilities; Retire R6
  - IRO-003-2 — RC – Wide Area View; Retire R1 and R2

## Comment Form — IROL Standards

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- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

EOP-001 R2 requires that a TOP have an emergency load reduction plan for all identified IROLs. The intent of this requirement is for the TOP to be ready to implement load reduction as directed by the RC to mitigate IROL violation when other control actions have been or are in parallel being implemented. Unless this requirement is covered elsewhere, it needs to be retained to assure TOP's readiness, which is in a different context than what the requirements in IRO-009 implies. The RC does not own or operate any load reduction scheme. It must rely on the operators of these schemes - the TOP and DP, as directed by the TOP, to implement load reduction.

We agree with retiring R6 of IRO-004-1, but suggest that a part of R3 in IRO-004-1 which requires that the RC develop action plans in conjunction with the TOPs, be reflected in this standard.

We believe the key requirement in R3 and R5 is for the RC to correct an IROL violation as soon as possible and within 30 minutes. This needs to be retained somewhere, preferably in this standard. Not having a time limit to correct IROL violation can result in an IROL being exceeded for an indefinite period of time, subjecting the system to prolonged risks of instability and potential cascade tripping. The 30 minutes also serves as the threshold that if an IROL violation cannot be corrected by adjusting generation and interchange, reconfiguration, reducing interruptible load, voltage reduction, etc. within that time frame, curtailment of firm load must also be implemented to correct the violation immediately.

We believe the concept of the RC approving outages needs to be retained somewhere in the standards, retiring R9 should be conditional on having this coordination/approval requirement covered by this (IRO-009) or another standard.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

(i) We agree with retiring R2 of IRO-002-1.

(ii) We do not agree with removing R1.2 from TOP-003-2. Providing transmission outage information to the RC is essential for ensuring the RC is aware of system changes that may affect interconnected system reliability. There should not be any prejudgment as to which outage has an impact on SOL only.

(iii) We agree with the proposed deletions/changes to IRO-005-2, TOP-005-1 and TOP-006-1.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

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Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

R2 of IRO-008 requires clarification or the definition of Real-Time Assessments needs to be revised to capture that an assessment needs to be done every thirty minutes and specific made as to how far into the future the assessments must cover.

R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct" be inserted after "...the Reliability Coordinator shall share its results with" in R3. This may clarify the IRO-008 standard but may introduce some redundancy with IRO-009 R3 and R4.

Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is the reason for having these terms defined?

In IRO-009, we question the need of both R1 and R2 since the difference is very subtle. R1 is to "prevent exceeding an IROL" and R2 is to "mitigate magnitude and duration of exceeding an IROL". Combining the two requirements would seem more practical since they are both in the same time frame of "in advance of Real-time". In the same way, R3 and R4 might be combined also.

In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay perhaps specifying a timeframe in the Requirements section R4. Also missing is the requirement to document, with a complete violation report, whenever an IROL violation has been exceeded beyond Tv.

In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document IROL violation incidents. This requirement is missing in the new version. We believe that this requirement should be stated in this standard.

We also have concern about these same standards appearing in NERC's Reliability Coordinator SAR (project 2006-06). Coordination of the comments is a major concern especially when the standards will be under revision here and also in that project concurrently.



**Comment Form — IROL Standards**

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments: It appears that R1 of IRO-013 would be more appropriately contained in the IRO standards. R1 of IRO-013 states: The BA, IA, and TOP shall each follow its RC's directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances the BA, IA or TOP shall immediately inform the RC of its inability to perform the directive so that the RC can implement alternate remedial actions. The directives covered by this requirement shall be those that:

R1.1. Prevent instances of exceeding interconnection reliability operating limits (IROLs).

R1.2. Mitigate the magnitude and duration of instances of exceeding IROLs.

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do

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you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments: Does regulatory approvals only include FERC or does it also include the NERC Board?

A standard approved by the NERC Board, for example, on September 30<sup>th</sup> would be implemented on January 1, which is too soon to prepare for. It might also be too soon even if it meant only FERC, since the NERC Board could approve September 29<sup>th</sup> followed by FERC approval on September 30<sup>th</sup>. In these instances, 6 months might be more appropriate.



5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments: Since the VRFs are being addressed through other ballots or procedures, and by the fact that this standard drafting team has no control over the VRFs, this question may be of no value to Industry.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments: The time horizon of Operations Planning related to Mitigation Time Horizons (day-ahead up to and including seasonal) is different from the time horizon used in the definition of IRO-008-1 Operational Planning Analysis (which is the next day's operation and up to 12 months ahead). Additionally, some utilities interpret Operations Planning as real time up to day ahead studies. This creates confusion with the term Operations Planning and Southern seeks clarification for the term.

Secondly, since each requirement's time horizon appears to be contemplated within the standard itself and reflected in the assignment of the Violation Risk Factor and Violation Severity Level, Southern believes including this characteristic in the penalty adjustment process is not necessary. Therefore, we believe the Mitigation Time Horizons should NOT be a penalty adjustment factor in determining monetary penalties for non compliance.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: Let's say a Reliability Coordinator (RC) who performs admirably throughout the year has only one identifiable IROL for the year. However, due to one reason or

another, the RC does not have a procedure in advance that identifies actions to prevent the instance from exceeding the IROL. This results in a SEVERE violation level.

Now, let's say a RC who does less than an admirable job throughout the year and has multiple (50) identifiable IROLs for the year. This RC is allowed approximately 8 instances of not having a procedure which identified actions to prevent exceeding the IROL, and this RC only achieves a MODERATE violation level. There needs to be some type of rewarding mitigation factor for those RCs who have very few identifiable IROLs.

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: One can never tell when an SOL will turn into an IROL. In fact, there may be several SOLs occurring at the same time which may turn into an IROL. What the drafting team is recommending in this standard is for the RC to no longer monitor or study SOLs even though NERC standards currently require them to. This seems contradictory to NERC's goal of maintaining a reliable BES.

Also, there are contradictory statements throughout the standard which require the RC to coordinate and communicate SOLs to the TSPs. However, according to the changes recommended in this standard, the RC will no longer be required to monitor SOLs. One such occurrence is in IRO-005-3, in which R11 states the RC shall make known to the TSPs in its wide-area view all SOLs and IROLs. How does the drafting team expect the RCs to make the TSPs aware of all SOLs when the RC is not expected to monitor or study the SOLs?

Southern Co. Transmission recommends that the RC continue to monitor and study SOLs as the current standards require. The August 2003 Blackout resulted, in part, from the RCs not monitoring and studying SOLs within its wide-area view. To move away from this concept will make the BES more vulnerable to a possible future blackouts.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:
- IRO-002-1 — RC – Facilities; Retire R6
  - IRO-003-2 — RC – Wide Area View; Retire R1 and R2
  - IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
  - TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

## Comment Form — IROL Standards

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Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: Southern Co. believes that the RC should monitor BES elements that could result in SOLs and IROLs. We believe the RC should know the current status of critical facilities whose failure could result in an SOL and IROL.

Therefore, we recommend keeping all the requirements being recommended for retirement.

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: Southern Co. believes the RC should conduct contingency analysis studies that would identify SOLs and IROLs. We recommend keeping both R1 and R2.

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: The RC has no knowledge of SOLs based on the SDT's recommended changes. So how will the RC coordinate SOL violations as the (new) R6 states in IRO-005-3? The new R11 in IRO-005-3 states the RC shall make known to the TSP all SOLs and IROLs in its area. How does the RC do this when they are NOT expected to study or monitor SOLs?

We do agree that EOP-001-0, R2 should be retired.

Recommend keeping R3 and R6 of IRO-004-1. The RC should develop action plans to return transmission loading to within acceptable SOL or IROLs.

Southern also recommends keeping R3, R5, R9, R13, R14, R16, and R17 of IRO-005-2.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: While we agree with the SDT's recommendations on TOP-003-0 and TOP-005-1, we disagree with the remainder of the retirement recommendations and suggest keeping the requirements as they are.

It is ironic that while the SDT is recommending the removal of requirements which specifically state that the TO, GO, GOP and LSE are to provide the RC with information required for system studies by 1200 noon each day, the Blackout Report stated a concern about the NERC standards' lack of requirements for providing reliability information to the RC.

In particular, under the heading of "Data Exchanged for Operational Reliability" in the Blackout Final Report, the Report states that "a variety of up-to-date information on the elements of the system must be collected and exchanged for modeled topology to be accurate in real time."

The Report states "there is no current requirement for how quickly asset owners must report changes in element status (such as a line outage) to the SDX. NERC is now developing a requirement for regular information update submittals that is scheduled to take effect in the summer of 2004." [Reference Page 51 of the Report]

We are approaching the third anniversary of the publishing of this Report and still have no requirement in any NERC Standard for submitting data to the NERC System Data Exchange.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

**Comment Form — IROL Standards**

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments: By balloting these standards in 4 separate ballots, certain problems arise. For example, Ballot 4 (IRO-010) says to retire R2 of IRO-002-1. Ballot 1 (IRO-007) says to retire R6 of IRO-002-1.

## Comment Form — IROL Standards

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IF one ballot fails and the other passes, Standard IRO-002-1 cannot be approved by the Board because one requirement passed the ballot voting while the other requirement did not.

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

**Comment Form — IROL Standards**

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Ron Falsetti	
Organization:	IESO	
Telephone:	906-855-6187	
E-mail:	ron.falsetti@ieso.ca	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities





### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

(i) We agree with the VRFs for IRO-008 and -010.

(ii) For IRO-007, the VRF for R1 should be HIGH. Real-time monitoring of system conditions to determine if system parameters are within IROLs is critical to ensuring interconnected system reliability. Lack of or insufficient monitoring would expose a system to potential unreliable operation.

(iii) For IRO-009, the VRFs for R1 and R2 should both be HIGH. The absence of pre-determined control actions that need to be made available to operation personnel to prevent and mitigate IROL violation can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (b), above.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

(i) We agree with the mitigation time horizons for IRO-007, -008 and -010.

(ii) For IRO-009, however, R1 and R2 should also be assigned a Same Day Operation time horizon since "identified in advance of real time" may include day at hand assessments.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments:

(i) We agree with the violation severity levels for IRO-007 and -008.

(ii) For IRO-009, the violation level is subject to interpretation. For example, "Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs." Does the 95% to 99% range apply to the number of IROLs identified, or to the total time that any IROLs are identified? In other words, is it the percentage of time that for all IROLs identified, there are Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding any IROLs?

To put the violation severity level in a more proper context, the SDT may want to consider putting the range in a "negative sense", i.e., the percentage of time that the requirements are not met, whichever the base of the above interpreted measurements turn out to be.

Better still, we suggest the SDT consider adopting violation severity levels based on the number of times that R1 or R2 is not met, i.e. the number of times that, for any IROLs that are identified in advance of real-time, there lacks operating processes, procedures, or plans that identify actions to prevent or mitigate instances of exceeding these IROLs. This way, assessment of violations can be made much more easily. Further, the severity level will be independent of the total number of IROLs identified, which can eliminate the skewed assessment due to a small of number of IROLs identified in an RC area. For example, under the as written % assessment structure, an RC could be found 0% compliant (and hence assessed a severe violation level) for just one incident of not meeting R1 or R2 if it had only one IROL identified.

(iii) For IRO-010, we agree with the measures as they are based on numbers, not a combination of number and duration. However, the same comment on "negative context" as provided for IRO-009 also apply here. In other words, we suggest turning the % meeting requirements to % failing to meet requirements (hence violation).

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: There are a number of requirements in the posted IRO-005-3 that still hold the RC responsible for being aware of and directing actions when a SOL is being approached or violated. The drafting team's proposed approach would require that corresponding changes be made to IRO-005-3. On the other hand, we feel that while the RC is not required to monitor these SOLs, they need to continue to be provided the information on the results of SOL determination and assessment as currently stipulated

## Comment Form — IROL Standards

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in R11 of TOP-002-2 since SOLs may become IROLs under certain conditions as determined by the RC.

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

(j) EOP-001 R2 requires that a TOP have an emergency load reduction plan for all identified IROLs. The intent of this requirement is for the TOP to be ready to implement load reduction as directed by the RC to mitigate IROL violations when other control actions have been implemented or are being implemented in parallel. Unless this



requirement is covered elsewhere, it needs to be retained to assure a TOP's readiness, which is in a different context than what the requirements in IRO-009 imply. Note that the RC does not own or operate any load reduction scheme. It must rely on the operators of these schemes - the TOP (and DP, as directed by the TOP), to implement load reduction.

(ii) We agree with retiring R6 of IRO-004-1, but suggest that a part of R3 in IRO-004-1 which requires that the RC develop the action plans in conjunction with the TOPs be reflected in this standard. This should be a requirement, not just an understanding, and hence needs to be stated explicitly herein.

(iii) We agree that R3, R5 and R9 of IRO-005-2 can be retired. However, the key requirement in R3 and R5 for the RC to correct an IROL violation as soon as possible and within 30 minutes needs to be retained somewhere, preferably in this standard. Not having a time limit to correct IROL violations can result in an IROL being exceeded for an indefinite period of time, subjecting the system to prolonged risks of instability and cascade tripping. The 30 minute also serves as the threshold for curtailing firm load to correct the violation immediately if an IROL violation cannot be corrected by adjusting generation and interchange, reconfiguration, reducing interruptible load, voltage reduction, etc. within that time frame.

(iv) Similar to our comment on IRO-004-1, that part in R9 of IRO-005-2 which requires the RC to coordinate transmission and generation outages needs to be stipulated somewhere, perhaps in the context of the RC approving outages. Hence, retiring R9 should be condition on halaving this coordination/approval requirement covered by this (IRO-009) or another standard.

(v) We agree that part 1 of R13, and R16 and R17 of IRO-005-2 can be deleted.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

(i) We agree with retiring R2 of IRO-002-1.

(ii) We agree with retiring R4 and R5 of IRO-004-1. However, the time frame for the RC to complete day-ahead assessment as stipulated in R5 should be retained somewhere as otherwise, there could be mis-coordination, delays and even failure to complete the assessment in time for other operating entities to prepare the system for next day operations.

**Comment Form — IROL Standards**

(iii) We do not agree with removing R1.2 from TOP-003-1. Providing transmission outage information to the RC is essential for ensuring the RC is aware of system changes that may affect interconnected system reliability. There should not be any prejudgment as to which outage has an impact on SOL only.

(iv) We agree with the proposed deletions/changes to IRO-005-2, TOP-005-1 and TOP-006-1.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5

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	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

(i) The requirement to monitor, or at least be aware of the impacts on, critical parameters in other RC's areas, as proposed for IRO-007 (M2.1) and IRO-008 (R1) in the previous draft set of standards posted on March 1, 2004, is missing. This monitoring capability is essential for identifying potential reliability impact on other RC areas due to operation plans and real-time operations in one RC area. Note that IRO-010 has this requirement (implicit in R3).

(ii) R2 of IRO-008 requires that Real-Time Assessments be performed at least every 30 minutes. The definition of Real-Time Assessment leaves open how far into the future the assessments must cover. Please clarify.

Using the current definition for Real-Time Assessments, R2 of IRO-008 would require that a complete study for the remainder of the operating day be performed at least every 30 minutes.

We believe it is more appropriate to consider Real-Time Assessment to mean the use of real-time information to assess system conditions for the current minute up to a certain time period, say, next hour. Operations Planning Analysis, which includes day at hand, should cover the remaining hours for the current day and beyond, up to about a year. We suggest the SDT consider revising the definitions in this manner to add clarity to R2 (and R1 as well) of IRO-008.

(iii) R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct as deemed necessary" be inserted after "...the Reliability Coordinator shall share its results with" in R3.

(iv) Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is the reason for having these terms defined?

(v) In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action.

The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay.

(vi) In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document and complete an IROL violation report for each instance of exceeding an IROL for time greater than that limit's Tv. This requirement is currently stipulated in EOP-004, with cross reference to TOP-007. We feel it's more appropriate for the RC to make this report and hence this requirement should be added to IRO-009.

(vii) We do not have any comments on the proposed measures. However, from a process viewpoint, none of the questions asked in this comment form seek concurrence or comments on any of the measures proposed. Since these measures did not exist in any of the current standards, and have been revised since the last draft versions (posted on March 1, 2004), the industry needs to have an opportunity to offer its view.

## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities

**Comment Form — IROL Standards**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Midwest Reliability Organization  
**Lead Contact:** Neal Balu  
**Contact Organization:** MRO for Group ( WPS resources for Contact)  
**Contact Segment:** 10  
**Contact Telephone:** 920-433-1846  
**Contact E-mail:** nbalu@wpsr.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Terry Bilke	MISO	MRO	10
Alan Boesch	NPPD	MRO	10
Robert Coish, Chair	MHEB	MRO	10
Carol Gerou	MP	MRO	10
Ken Goldsmith	ALT	MRO	10
Todd Gosnell	OPPD	MRO	10
Jim Haigh	WAPA	MRO	10
Tom Mielnik	MEC	MRO	10
Pam Oreschnick	XEL	MRO	10
Dick Pursley	GRE	MRO	10
Dave Rudolph	BEPC	MRO	10
Eric Ruskamp	LES	MRO	10
Joe Knight, Secretary	MRO	MRO	10
27 Additional MRO members	Not named above	MRO	10

\*If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or



(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments: This is a step in the right direction, and the revised IRO-010-1 captures the relevant information related to data collection as reflected in R1.1, R1.3, R1.4, R3. A fewer number of standards to deal with is always better.

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments: While the description of requirements captures the essence of preventing and mitigating IROLs, it would be helpful for clarity to change the title of the revised IRO-009-1 to Reliability Coordinator actions to operate within IROLs and plans to prevent/mitigate IROLs.

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments: Project 2007-02 should have been included with this package for us to consider. The MRO is also concerned that there is a general trend to develop too many requirements and measures, which would become administratively burdensome to the ERO and the entities that must comply.

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments: It is difficult to prescribe one time window such as, three months after regulatory approvals. Different Standards might require different implementation times to allow the responsible entities to become fully compliant. For example, for those Standards that require equipment installation, it would take more than 3 months to satisfy the compliance requirements. Moreover, the Standards drafting team is the appropriate body to stipulate how much time is needed after regulatory approvals to become compliant.

5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments: For many requirements, the VRFs are overstated. ERO has not given correct directives on how to assign VRFs. In addition, one cannot assign a single VRF for a requirement such as IRO-008-1 R3 that covers both Operational Planning Analysis, and real time assessment. In such instances, IRO -008-1 R3 should be split into two separate requirements, one dealing with Operational Planning Analysis, for which the VRF would be Medium and the other, addressing real time assessment for which the VRF would be High. For IRO-007-1 R2, the VRF should be Medium since not adopting the most conservative value for IROL or its Tv would not result in cascading outages. For IRO-010-1 Requirement R2, the VRF should be Low since it is an administrative item, and all that is needed is that the RC receives the status information.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments: Mitigation Time Horizons are described near the top of this comment form.

The description of the Mitigation Time Horizons states: The ERO Rules of Procedure include the use of mitigation time horizons as one element used to determine the size of sanctions.

Can the drafting team inform the Registered Ballot Body where the ERO definition of Mitigation Time Horizons can be found along with documentation describing how the mitigation time horizons will be used in determining penalties. Mitigation Time Horizons are not listed as a Performance Element of a Reliability Standard in the Reliability Standards Development Procedure Version 6 adopted by the NERC BOT on November 1, 2006. As such, it does not seem appropriate to include them in any Reliability Standards.

The comment form description of Mitigation Time Horizons further states The drafting team used the following guidelines in developing mitigation time horizons for each requirement, whereas the final statement in the description of the Violation Risk Factors states The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure. Like the Violation Risk Factors, the categories of Mitigation Time Horizons should also be approved and incorporated into the Reliability Standards Development Procedure in order to ensure that the definitions are consistent for all NERC Reliability Standards.

## Comment Form — IROL Standards

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The MRO cannot vote to approve a standard that includes Mitigation Time Horizons until the drafting team can produce ERO documented definitions and the documented manner in which the Mitigation Time Horizons will be used to determine penalties.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include “violation severity levels” rather than “levels of non-compliance.” “Violation severity levels” identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the “Violation Risk Factor” appended to each requirement.) Note that these severity levels are “guidelines” and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: The way the Violation Severity levels are spelled out, it again appears to be arbitrary cut offs, and especially the High and Severe Violation Severity Levels have to be tightly defined so that the entities would know what actions to take to be compliant.

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with the drafting team’s approach?

I agree the drafting team’s approach

I do not agree with the drafting team’s approach

Comments:

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

## Comment Form — IROL Standards

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I do not agree with the following conforming changes:

Comments: The MRO agrees with the SDT in striking the first part of IRO-005-2 since it is already covered in FAC-014-R5.1. However, the MRO does not agree with the proposed revision to the second part that states: The Transmission Service Providers shall respect SOLs and IROLs in accordance with filed tariffs..... Since the RC may not know all SOLs and IROLs, it is not possible for the RC to make the TSP aware of what the RC itself does not know. The MRO recommends the SDT amend the proposed revision to state: The Transmission Service Provider shall respect all KNOWN SOLs and IROLs in accordance with.....

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

**Comment Form — IROL Standards**

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: The MRO reviewed the implementation plan and it is clear that IRO-010-1 gives the flexibility to specify the data requirements in R1 and the requirement that the functional entities follow them in R3.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning



## Comment Form — IROL Standards

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	- Retire R4, R5
IRO-005-2 — RC – Current Day Operations	- Retire R2
TOP-003-0 — Planned Outage Coordination Modify R1.2	
TOP-005-1 — Operational Reliability Information	- Retire R1, R1.1; Convert Attachment A to a Reference
TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control	- Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments: The MRO requests clarification as to why the following two definitions were added in IRO-009-1 and never used: Interconnection Reliability Operating Limit Event, and Interconnection Reliability Operating Limit Event Duration. If terms are specifically added to a standard, it is expected that the terms will be used in the standard. If the new terms are not to be used in the standard where they are originally defined, it would appear that the new terms are not needed and should be struck from the standard until a such time that they are to be used.

The MRO requests the definition of the term Delay, as it is used in in IRO-009-1-R4. Is the RC considered in violation if it does not act with in one minute? If it does not act with in two-minutes. Leaving this term undefined will result in arbitrary enforcement of this standard

**Comment Form — IROL Standards**

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	David L. Folk	
Organization:	First Energy Corp	
Telephone:	330-384-4668	
E-mail:	folkd@firstenergycorp.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> MRO	<input checked="" type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> RFC	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input checked="" type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

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- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

During the drafting work done by the Missing Measures and Compliance Elements Standards Drafting Team, stakeholders indicated that duplication of requirements should be eliminated. In support of these comments, the drafting team recommends moving the requirements from *IRO-013 — Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed without duplication under the single *Project 2007-02 — Operating Personnel Communication Protocols*.

### Conforming Changes to Already Approved Standards

The drafting team reviewed already-approved standards that include requirements for the Reliability Coordinator relative to operating within SOLs or IROLs and is recommending conforming changes to those already-approved standards. The implementation plan provides the justification for each of these recommended changes.

- The drafting team is recommending retirement of most of the requirements assigned to the Reliability Coordinator for real-time operation within SOLs — they should be assigned to the Transmission Operator. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.
- The drafting team is recommending that requirements that describe possible types of acceptable behavior be replaced with requirements that identify the required performance, as in the case of recommending that IRO-005-2 R3 be retired when IRO-009-1 becomes effective.
- In many cases the drafting team would have recommended additional changes to the requirements in already approved standards, but doing so would be outside the scope of the SAR assigned to this drafting team and the changes can be accomplished when the standards are updated as part of the *Reliability Standards Development Plan: 2007–2009*.

### **Conforming Changes to Bring Standards into Alignment with Reliability Standards Development Procedure V6 and ERO Rules of Procedure**

A new version of the Reliability Standards Development Procedure was approved by the NERC Board of Trustees on November 1, 2006. The drafting team made the following changes to the standards to bring them into conformance with the revised manual or other changes needed to conform to the ERO Rules of Procedure:

#### **1. Modified the format of the "Proposed Effective Dates"**

The drafting team modified the proposed effective dates to reflect that the standards cannot become effective until approved by applicable regulatory authorities. The drafting team estimated that it will take approximately three months following Board of Trustee adoption, to obtain regulatory approval from FERC and Canadian authorities.

#### **2. Added Violation Risk Factors to each requirement**

Violation risk factors identify the potential impact to reliability when the associated requirement has been violated. The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure:

##### ***A High Risk Factor requirement:***

(a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

##### ***A Medium Risk Factor requirement***

(a) is a requirement that, if violated, could the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or

(b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

**A Lower Risk Factor requirement** is administrative in nature and

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
- **Operations Planning:** operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations:** routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations:** actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment:** follow-up evaluations and reporting of real time operations.

### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

The drafting team deleted "levels of non-compliance" and added "violation severity levels" to comply with the revised Reliability Standards Development Procedure. Compliance personnel assisted the drafting team in using the following criteria from the manual to establish violation severity levels:

- **Lower:** mostly compliant with minor exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

**6. Added 'Associated Documents' where applicable**

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:



## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments:

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments:

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: IRO-009-1 Violation Severity Level 2.3.2 should read as follows "... delay of 5 minutes or greater before acting or directing ..."

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

## Comment Form — IROL Standards

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Comments:

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: The revised IRO-005 requirement 10 (formerly Requirement 13) should be moved to TOP-004 Transmission Operations since it now only pertains to Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities.

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6
- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: IRO-005-2 Requirement 9 does not appear to be marked for deletion as proposed above in the files provided with this posting.

**Comment Form — IROL Standards**

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12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments:

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2

**Comment Form — IROL Standards**

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	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

## Comment Form — IROL Standards

Please use this form to submit comments on the proposed IROL standards. Comments must be submitted by **February 15, 2007**. You may submit the completed form by e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the acronym "IROL" in the subject line. If you have questions please contact Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or by telephone at 609-452-8060.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	James H. Sorrels, Jr.	
Organization:	American Electric Power Company	
Telephone:	(614) 716-2370	
E-mail:	jhsorrels@AEP.com	
NERC Region		Registered Ballot Body Segment
<input checked="" type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 — RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 - Regional Reliability Organizations; Regional Entities



### Background Information:

The IROL standards were placed in a holding pattern for two years while waiting for the completion of the standards that require entities to document and use their methodology for developing SOLs and IROLs. FAC-010-1 — System Operating Limits Methodology for the Planning Horizon, FAC-011-1 — System Operating Limits Methodology for the Operations Horizon, and FAC-014-1 — Establish and Communicate System Operating Limits, were all adopted by the NERC Board of Trustees on November 1, 2006. While waiting for these standards to be approved by applicable regulatory authorities, the drafting team has been given the authority to move ahead in refining the set of IROL standards.

### Changes to Set of Standards

When last posted, there were seven standards in this set of IROL standards:

- IRO-007 — Monitoring the Wide Area
- IRO-008 — Reliability Coordinator Analyses and Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection
- IRO-011 — Providing Data to the Reliability Coordinator
- IRO-012 — Procedures, Processes or Plans for Preventing and Mitigating IROLs
- IRO-013 — Reliability Coordinator Directives Relative to IROLs

### Consolidation of Related Requirements

The revised set of standards posted for comment includes only IRO-007 through IRO-010. The drafting team is recommending the following changes to the original set of standards for the reasons stated below:

- Consolidate IRO-010 and IRO-011 into a single standard
- Consolidate IRO-009 and IRO-012 into a single standard
- Transfer IRO-013 to Project 2007-02 — Operating Personnel Communications Protocols

Many stakeholders have indicated that splitting requirements for related tasks across multiple standards leads to cross-referencing between standards that can be confusing — for this reason the drafting team is proposing that the related IROL standards be consolidated to eliminate cross-referencing.

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**A Lower Risk Factor requirement** is administrative in nature and

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The drafting team added violation risk factors for each requirement. (For this set of BAL standards, the violation risk factors drafting team provided the violation risk factors already identified by stakeholders. If stakeholders indicate that some of the risk factors posted November 2 through December 1, 2006 need modification, the Balance Resources and Demand Standards Drafting Team will make conforming changes to the risk factors in these standards.)

### 3. Added a Mitigation Time Horizon to each requirement

The ERO Rules of Procedure include the use of Mitigation Time Horizons as one element used to determine the size of sanctions. The drafting team used the following guidelines in developing mitigation time horizons for each requirement:

- **Long-term Planning:** a planning horizon of one year or longer.
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### 4. Changed the identification of the Compliance Monitor

The drafting team modified all references to the Regional Reliability Organization as the Compliance Monitor, and replaced these references with, "Electric Reliability Organization."

### 5. Deleted Levels of Non-compliance – Added Violation Severity Levels

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- **Moderate:** mostly compliant with significant exceptions — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High:** marginal performance or results — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe:** poor performance or results — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

### 6. Added 'Associated Documents' where applicable

The drafting team added a section "F" to the standard called, "Associated Documents" to list items such as forms, related standards, reports, etc.

On the following pages, the drafting team will ask for your feedback on the appropriateness of the changes it made to this set of standards. Because the changes made to the set of standards included a great deal of consolidation, a red line version will not be posted as it is not distinguish the content changes from the format changes when comparing the two versions.

**You do not have to answer all questions.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. The drafting team consolidated the requirements for *IRO-010— Reliability Coordinator Data Specification and Collection* and *IRO-011— Providing Data to the Reliability Coordinator* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

2. The drafting team consolidated the requirements for *IRO-009 — Reliability Coordinator Actions to Operate within IROLs* and *IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs* into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

Yes

No

Comments:

3. The drafting team recommends moving the requirements from *IRO-013 —Reliability Coordinator Directives Relative to IROLs* into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single *Project 2007-02 – Operating Personnel Communication Protocols*. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

Yes

No

Comments:

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

Yes

No

Comments:

## Comment Form — IROL Standards

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5. The drafting team added a Violation Risk Factor for each requirement.

Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

I agree with the proposed Violation Risk Factors

I do not agree with the following Violation Risk Factors:

Comments: IRO-007-1 R1: VRF should be high not medium.

IRO-008-1 R1: VRF should be high not medium.

IRO-008-1 R3: VRF should be high not medium.

6. The drafting team added a Mitigation Time Horizon for each requirement.

Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

I agree with the proposed Mitigation Time Horizons

I do not agree with the following Mitigation Time Horizons:

Comments: IRO-008-1 R3: MTH should be: same day operations; real-time operations.

7. The latest version of the Reliability Standards Development Procedure requires that each standard include "violation severity levels" rather than "levels of non-compliance." "Violation severity levels" identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the "Violation Risk Factor" appended to each requirement.) Note that these severity levels are "guidelines" and variations from the above categories are acceptable.

Do you agree with the violation severity levels for each of the proposed standards? If you disagree with any of the violation severity levels for the proposed standards, please identify the standard and requirement you feel has an incorrect violation severity level.

I agree with the violation severity levels

I do not agree with the following violation severity levels:

Comments: IRO-008-1: Change the Moderate Violation Severity Level to: Not Applicable

IRO-008-1: Add to the High Violation Severity Level: Shared the results with some but not all of the entities that were required to take action.

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits — yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause

## Comment Form — IROL Standards

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of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator's accountability for real-time actions relative to SOLs. Do you agree with the drafting team's approach?

I agree the drafting team's approach

I do not agree with the drafting team's approach

Comments: Exempting Reliability Coordinators from all SOLs is inappropriate. Most of the TLRs that the Reliability Coordinators call today are for relieving SOLs not IROLs, therefore, exempting them from knowing and taking action on those SOLs is in direct conflict with current practices and does not improve the reliability practices from what we have today. At a minimum, Reliability Coordinators need to monitor and know the EHV system SOLs and ensure operation within those SOLs and to monitor and operate to other SOLs as specified in the agreements between the RC and TOPS and BA (see ORG-021-1 R3).

9. The drafting team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R6
- IRO-003-2 — RC – Wide Area View; Retire R1 and R2
- IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: We agree with the development of IRO-007-1. We don't agree to retiring IRO-002-1 R6, IRO-003-2 R1, IRO-003-2 R2, TOP-006-1 R2 if the Reliability Coordinator Operational Analysis and Real-Time Assessment standard (IRO-008-1) does not require the Balancing Authority to monitor and take action for an agreed upon set of SOLs as discussed in response to question 8.

IRO-005-2 R1.1-R1.10 sets a minimum threshold (and clearly states it is not an exhaustive list) of requirements for all Reliability Coordinators to monitor. We feel that these requirements if moved should be included in IRO-008-1 rather than IRO-007-1 R1. Furthermore IRO-007-1 R1 and IRO-008-1 is too vague and does not set a minimum set of requirements as a baseline. If IRO-005-2 R1.1-R1.10 is retired we suggest that the associated requirements are put into the appropriate standard as follows "Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:

Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.

## Comment Form — IROL Standards

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Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.

Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.

System real and reactive reserves (actual versus required).

Capacity and energy adequacy conditions.

Current ACE for all its Balancing Authorities.

Current local or Transmission Loading Relief procedures in effect.

Planned generation dispatches.

Planned transmission or generation outages.

Contingency events."

We fail to see how this is an improvement from how things are today. The technical reference document has yet to be created therefore leaving a gap in visibility of responsibility and accountability.

IRO-005-2 R13 should not remove the Reliability Coordinator from the list of parties that need to operate the Bulk Electric system to the most limiting parameter.

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:

- IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: We don't agree to retiring IRO-004-1 R1 if IRO-008-1 R1 does not require the Balancing Authorities to monitor and taking action based on an agreed upon set of SOL as discussed in response to question 8.

Furthermore IRO-008-1 R1 is too vague and does not set a minimum set of analysis or data requirements as a baseline. We fail to see how this is an improvement from how things are today.

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

- EOP-001-0 — Emergency Operations Planning; Retire R2
- IRO-004-1 — RC – Operations Planning; Retire R3 and R6

## Comment Form — IROL Standards

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- IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: EOP-001-0 R2 should not be retired because Transmission Operators still need to have an emergency load reduction plan for all identified IROLs. We do agree that this plan needs to be coordinated with the plan(s) for the Reliability Coordinator referenced in proposed requirement IRO-009-1 R1. The Reliability Coordinator will need to make the determination whether or not load needs to be dropped to relieve an IROL, but based on the plan determination of what loads and required actions to drop that load needs to be developed and carried out by the Transmission Operator.

IRO-004-1 Should not be removed. The comment in the Implementation Plan notes (page 8) "under some conditions, the Reliability Coordinator may not have time to 'coordinate' the development of these plans with all of its transmission Operators and Balancing Authorities. IRO-004-1 is, by definition of the standard, for activities that were a day ahead or more in their performance and did not deal with any current day analysis. Therefore, the rationale of not having time to coordinate is not valid.

To address our concerns with the retirement of some of the existing requirements, IRO-009-1 R1 & R3 needs to be modified to say each IROL "or each EHV SOL" for each reference of IROL in the requirements.

We understand that IRO-005-2 R9 is to be modified not retired as stated in the comment form. We concur with the modification, but do not agree with retirement of this requirement.

IRO-005-2 R13 should not be modified as drafted since IRO-008 R1 does not require the Balancing Authority to monitor and taking action for an agreed upon set of SOL as discussed in response to question 8. IRO-005-2 R13 should be reworded to ensure that Reliability Coordinators, Balancing Authorities and Transmission Operators operate to the agreed upon SOLs per the agreements.

IRO-005-2 R14 we agree with the comments in the implementation plan, but the red-lined version does not agree with the recommended changes in the implementation plan.

IRO-005-2 R16 & R17 we can agree to retire these requirements to the extent that IRO-008 is modified with the changes we have stated.

12. The drafting team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

- IRO-002-1 — RC – Facilities; Retire R2

## Comment Form — IROL Standards

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- IRO-004-1 — RC – Operations Planning; Retire R4, R5
- IRO-005-2 — RC – Current Day Operations; Retire R2
- TOP-003-0 — Planned Outage Coordination; Modify R1.2
- TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

I agree with the proposed conforming changes

I do not agree with the following conforming changes:

Comments: While we agree with limiting the cross references in the standards, we don't agree with changes to IRO-010-1 and the modifications/retirement of many existing standards/requirements.

For example, we disagree with the modification to IRO-010-1 R1.3 allowing the Reliability Coordinator specifying the reporting time frame opposed to a universal time reporting period. We support the timing requirement that is currently in place in IRO-004-1 R4.

IRO-010-1 needs to require the Reliability Coordinator to share the results of its system studies with other entities as required in IRO-004-1 R5.

IRO-008-1 R3 is also not adequate for this purpose as it only requires the Reliability Coordinator to share results of studies that indicate the possibility of exceeding the limits of an IROL. The Reliability Coordinator needs to perform studies and if EHV SOLs have the potential of being violated, the Reliability Coordinator needs to share these results with the Transmission Operators and Balancing Authorities.

TOP-003-0 R1.2 we feel that is a mistake to remove the Reliability Coordinator from a standard labeled "Planned Outage Coordination".

Retiring TOP-005-1 R1 & R1.1 is acceptable

TOP-006-1 R2 we do not agree with the changes. IRO-007-1 only referenced IROL monitoring not the monitoring of EHV SOL.

TOP-006-1 R4 there is no point in removing the Reliability Coordinator from this requirement rather than implying it.

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of



**Comment Form — IROL Standards**

standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

No known conflicts or unnecessary adverse impacts

Known conflict:

Unnecessary adverse impact on markets:

14. The drafting team is recommending that these standards be balloted with **four separate ballots**, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

Ballot for:	Includes Associated Changes to Already Approved Standards:
IRO-007	IRO-002-1 — RC – Facilities - Retire R6 IRO-003-2 — RC – Wide Area View - Retire R1 and R2 IRO-005-2 — RC – Current Day Operations - Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R2
IRO-008	IRO-004-1 — RC – Operations Planning - Retire R1 and R2
IRO-009	EOP-001-0 — Emergency Operations Planning - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R3 and R6
	IRO-005-2 — RC – Current Day Operations Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17
IRO-010	IRO-002-1 — RC – Facilities - Retire R2
	IRO-004-1 — RC – Operations Planning - Retire R4, R5
	IRO-005-2 — RC – Current Day Operations - Retire R2
	TOP-003-0 — Planned Outage Coordination Modify R1.2
	TOP-005-1 — Operational Reliability Information - Retire R1, R1.1; Convert Attachment A to a Reference
	TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control - Modify R4

I agree with balloting these standards using four separate ballots

I do not agree balloting these standards using four separate ballots:

## Comment Form — IROL Standards

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Comments:

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments: We believe that this draft has significantly diluted the responsibilities of the Reliability Coordinator in the operation planning and real-time horizons. The proposed standards/requirements are completely off track with where they were before. As was mentioned in number 8 of the comment form, this draft seems to be heavily focused on monitoring IROLs, which is one of many of their responsibilities, but not their only responsibility.

The IROL Standard Drafting Team thanks all commenters who submitted comments on the seventh draft of the IROL Standards. The drafting team extends its thanks and gratitude to the commenters. This has been a complex effort for the industry. Your comments have added clarity and improved the consistency of the output of this team. The set of standards addressed includes the following:

- IRO-007-1 — Monitoring the Reliability Coordinator Wide Area
- IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009-1 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010-1 — Reliability Coordinator Data Specification and Collection

These standards were posted for a 45-day public comment period from January 2 through February 15, 2007. The IROL Standard Drafting Team (IROL SDT) and the Compliance Elements Drafting Team (CEDT) working on this set of standards asked stakeholders to provide feedback on the standard through a special standard Comment Form. There were 15 sets of comments, including comments from more than 59 different people from more than 39 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

The IROL SDT and the CEDT working on this set of standards considered the comments submitted, and made the following conforming changes:

- IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments
  - Modified the Time Horizon for R3 to include **both** Real-time Operations and Same-day Operations.
    - R3 requires the Reliability Coordinator, under certain conditions, to share the results of some of its Operational Planning Analyses and Real-Time Assessments with those entities that are expected to take those actions.
    - The Time Horizon had been 'Same Day Operations' which is defined as, 'routine actions required within the timeframe of a day, but not real-time.' The addition of the 'Real-time Operations' Time Horizon, which is defined as, 'actions required within one hour or less to preserve the reliability of the bulk electric system' is an improvement since it reflects that the Reliability Coordinator may need to act very quickly, in 'real-time' to share this information.
- IRO-009-1 — Reliability Coordinator Actions to Operate Within IROLs
  - Deleted the definitions for the two terms that are no longer used in the standards
    - Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration
  - Modified the Time Horizon for R1 to include **both** Operations Planning or Same Day Operations
    - R1 requires that the Reliability Coordinator have Operating Processes, Procedures, or Plans for each IROL that is identified in advance of Real-time to prevent exceeding the IROL.
    - The Time Horizon had been 'Operations Planning' which is defined as, 'operating and resource plans from day-ahead up to and including seasonal'. The addition of the 'Same Day Operations' Time Horizon, which is defined as, 'routine actions required within the timeframe of a day, but not real-time' is an improvement since it reflects that the Reliability Coordinator may need to develop some of these action plans the same day the potential IROL is identified.

- Modified the Time Horizon for R2 to include **both** Operations Planning or Same Day Operations
  - R2 requires that the Reliability Coordinator have Operating Processes, Procedures, or Plans for each IROL that is identified in advance of Real-time to mitigate an instance of exceeding the IROL within that IROL's T<sub>v</sub>.
  - The Time Horizon had been 'Operations Planning' which is defined as, 'operating and resource plans from day-ahead up to and including seasonal'. The addition of the 'Same Day Operations' Time Horizon, which is defined as, 'routine actions required within the timeframe of a day, but not real-time' is an improvement since it reflects that the Reliability Coordinator may need to develop some of these action plans the same day the potential IROL is identified.
- Modified the violation severity level for R1 to omit the use of percentages and to show that violation of any of these requirements is 'Severe'
- IRO-010-1
  - Modified the Violation Risk Factor for R1 and R2 from 'Medium' to 'Low'
  - R1 and R2 require the Reliability Coordinator to have and distribute a specification for the reliability-related data it needs and a failure to accomplish these tasks wouldn't necessarily have an impact on the bulk electric system and are more appropriately labeled as 'Low'.
  - Corrected the perceived gaps in the percentages used for violation severity levels by adding the phrase, 'greater than or equal to' so that rather than saying '95% to 99%' the revised language says, 'greater than or equal to 95% but less than 100%'.
- IRO-005-3
  - Modified R12 by deleting the parenthetical reference to SOL to clarify that the Reliability Coordinator is not assigned primary responsibility for responding to SOLs. R12 now states:
    - Each Reliability Coordinator who foresees a transmission problem (such as an ~~SOL~~ IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay.

Based on the comments received and the conforming changes made based on those comments, the drafting team is recommending that the Standards Committee authorize moving the standards forward to ballot.

In this "Consideration of Comments" document stakeholder comments have been organized so that it is easier to see the responses associated with each question. All comments received on the standards can be viewed in their original format at:

<http://www.nerc.com/~filez/standards/Relay-Loadability.html>

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Director of Standards, Gerry Adamski, at

609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

**Consideration of Comments on Draft 7 of the IROL Standards**

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

Commenter	Organization	Industry Segment									
		1	2	3	4	5	6	7	8	9	10
1. Anita Lee (G1)	AESO		X								
2. Ken Goldsmith (G7)	ALT	x									
3. Jason Shaver	ATC	x									
4. Dave Rudolph (G7)	BEPC										
5. Brent Kingsford (G1)	CAISO		X								
6. Ed Thompson (G2)	ConEdison	X									
7. Peter Yost (G2)	ConEdison	x									
8. Ed Davis	Entergy	x									
9. Steve Myers (G1)	ERCOT		X								
10. David Folk	First Energy Corp	x		x		x	x				
11. Dick Pursley (G7)	GRE										
12. David Kiguel (G2)	Hydro One	X									
13. Roger Champagne (G2) (I)	Hydro-Québec TransÉnergie	x									
14. Ron Falsetti (G1) (I) (G2)	IESO		X								
15. Kathleen Goodman (G2) (I)	ISO-NE		x								
16. Matt Goldberg (G1)	ISO-NE		X								
17. Jim Cyrulewski (G3)	JDRJC Associates								x		
18. Eric Ruskamp (G7)	LES										
19. Don Nelson (G2)	MA Dept of Energy and Tele									X	
20. Robert Coish (I) (G7)	Manitoba Hydro	x		x		x	x				
21. Tom Mielnik (G7)	MEC										
22. Jason Marshall (G3)	Midwest ISO		x								
23. Bill Phillips (G1)	MISO		X								
24. Terry Bilke (G7)	MISO		x								
25. Carol Gerou (G7)	MP										

**Consideration of Comments on Draft 7 of the IROL Standards**

Commenter	Organization	Industry Segment									
		1	2	3	4	5	6	7	8	9	10
26. Joe Knight (G7)	MRO										x
27. Murale Gopinathan (G2)	Northeast Utilities	x									
28. Guy Zito (G2)	NPCC										x
29. James Harwell (G2)	NPCC										x
30. John Mosier (G2)	NPCC										x
31. Alan Boesch (G7)	NPPD	x									
32. Jerad Barnhart (G2)	NStar	X									
33. Greg Campoli (G2)	NYISO		x								
34. Mike Calimano (G1)	NYISO		X								
35. Ralph Rufrano (G2)	NYPA	x									
36. Al Adamson (G2)	NYSRC		x								
37. Todd Gosnell (G7)	OPPD										
38. Richard Kafka	Pepco Holdings, Inc.	x									
39. Alicia Daugherty (G1)	PJM		X								
40. C. Robert Moseley (G5)	Public Service Commission of South Carolina									x	
41. David A. Wright (G5)	Public Service Commission of South Carolina									x	
42. Elizabeth B. Fleming (G5)	Public Service Commission of South Carolina									x	
43. G. O'Neal Hamilton (G5)	Public Service Commission of South Carolina									x	
44. John E. Howard (G5)	Public Service Commission of South Carolina									x	
45. Mignon L. Clyburn (G5)	Public Service Commission of South Carolina									x	
46. Phil Riley (G5)	Public Service Commission of South Carolina									x	
47. Randy Mitchell (G5)	Public Service Commission of South Carolina									x	
48. Jim Busbin (G6)	Southern Co. Transmission	x									
49. Jim Griffith (G6)	Southern Co. Transmission	x									
50. JT Wood (G6)	Southern Co. Transmission	x									
51. Marc Butts (G6)	Southern Co. Transmission	x									
52. Roman Carter (G6)	Southern Co. Transmission	x									
53. Dean Robinson (G4)	TVA	x									
54. Mark Creech (G4)	TVA	x									
55. Stuart Goza (G4)	TVA	x									
56. Sue Mangum-Goins	TVA	x									

**Consideration of Comments on Draft 7 of the IROL Standards**

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Commenter	Organization	Industry Segment									
		1	2	3	4	5	6	7	8	9	10
(G4)											
57. Jim Haigh (G7)	WAPA										
58. Neal Balu (G7)	WPS										x
59. Pam Oreschnick (G7)	XEL										

I – Indicates that individual comments were submitted in addition to comments submitted as part of a group

G1 - IRC Standards Review Committee

G2 – NPCC CP9 Reliability Standards Working Group (NPCC CP9)

G3 – Midwest ISO Stakeholders Standards Collaboration Participants (MISO SSC)

G4 – TVA

G5 – Public Service Commission of SC (PSC of SC)

G6 – Southern Company Transmission (Southern Co)

G7 – MRO



**Index to Questions, Comments and Responses:**

1. The drafting team consolidated the requirements for IRO-010— Reliability Coordinator Data Specification and Collection and IRO-011— Providing Data to the Reliability Coordinator into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain. .... 9

2. The drafting team consolidated the requirements for IRO-009 — Reliability Coordinator Actions to Operate within IROLs and IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain..... 10

3. The drafting team recommends moving the requirements from IRO-013 —Reliability Coordinator Directives Relative to IROLs into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single Project 2007-02 – Operating Personnel Communication Protocols. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain..... 12

4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain. .... 15

5. The Drafting Team added a Violation Risk Factor for each requirement. Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect. .... 17

6. The Drafting Team added a Mitigation Time Horizon for each requirement. Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect..... 21

7. The latest version of the Reliability Standards Development Procedure Manual requires that each standard include ‘violation severity levels’ rather than ‘levels of non-compliance’. ‘Violation severity levels’ identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the ‘Violation Risk Factor’ appended to each requirement.) Note that these severity levels are ‘guidelines’ and variations from the above categories are acceptable. .... 25

Do you agree with the Violation Severity Levels for each of the proposed standards? If you disagree with any of the Violation Severity Levels for the proposed standards, please identify the standard and requirement you feel has an incorrect Violation Severity Level. .... 25

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits – yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with ..... 29

9. The Drafting Team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards: ..... 34

IRO-002-1 — RC – Facilities; Retire R6 ..... 34

IRO-003-2 — RC – Wide Area View; Retire R1 and R2..... 34

IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2 ..... 34

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2 ..... 34

**Consideration of Comments on Draft 7 of the IROL Standards**

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Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect. .... 34

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard: ..... 40

IRO-004-1 — RC – Operations Planning; Retire R1 and R2..... 40

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect. .... 40

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards: ..... 42

EOP-001-0 — Emergency Operations Planning; Retire R2 ..... 42

IRO-004-1 — RC – Operations Planning; Retire R3 and R6..... 42

IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17 ..... 42

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect. .... 42

12. The Drafting Team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards: ..... 51

IRO-002-1 — RC – Facilities; Retire R2 ..... 51

IRO-004-1 — RC – Operations Planning; Retire R4, R5..... 51

IRO-005-2 — RC – Current Day Operations; Retire R2 ..... 51

TOP-003-0 — Planned Outage Coordination; Modify R1.2..... 51

TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference ..... 51

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4 ..... 51

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect. .... 51

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here. .... 54

14. The drafting team is recommending that these standards be balloted with four separate ballots, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc. .... 55

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here. .... 57

1. The drafting team consolidated the requirements for IRO-010— Reliability Coordinator Data Specification and Collection and IRO-011— Providing Data to the Reliability Coordinator into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

**Summary Consideration:** All commenters agreed with consolidating the requirements in IRO-010 and IRO-011.

Question #1			
Commenter	Yes	No	Comment
MRO	x		This is a step in the right direction, and the revised IRO-010-1 captures the relevant information related to data collection as reflected in R1.1, R1.3, R1.4, R3. A fewer number of standards to deal with is always better.
ATC	x		ATC agrees with the decision to combine standards IRO-010 and IRO-011 into a single standard.
IRC Standards Review Committee	x		
Entergy	x		
Southern Co	x		
Manitoba Hydro	x		
PSC of SC	x		
Pepco Holdings, Inc.	x		
IESO	x		
First Energy Corp	x		
NPCC CP9	x		
ISO-NE	x		
Hydro-Québec TransÉnergie	x		
MISO SSC	x		
TVA	x		

2. The drafting team consolidated the requirements for IRO-009 — Reliability Coordinator Actions to Operate within IROLs and IRO-012— Procedures, Processes or Plans for Preventing and Mitigating IROLs into a single standard to eliminate the cross-reference between the two standards. Do you agree with consolidating the requirements into a single standard? If not, please explain.

**Summary Consideration:** All commenters agreed with consolidating the requirements in IRO-009 and IRO-012.

Question #2			
Commenter	Yes	No	Comment
MRO	x		While the description of requirements captures the essence of preventing and mitigating IROLs, it would be helpful for clarity to change the title of the revised IRO-009-1 to Reliability Coordinator actions to operate within IROLs and plans to prevent/mitigate IROLs.
<b>Response:</b> The drafting team struggled with the exact title necessary for this standard, but in the end felt that keeping the current as posted title will better assist the industry in comprehending the scope of the requirements. The development of plans is one of the Reliability Coordinator’s actions to operate within IROLs.			
Manitoba Hydro	x		MH endorses the MRO comments: While the description of requirements captures the essence of preventing and mitigating IROLs, it would be helpful for clarity to change the title of the revised IRO-009-1 to Reliability Coordinator actions to operate within IROLs and plans to prevent/mitigate IROLs.
<b>Response:</b> The drafting team struggled with the exact title necessary for this standard, but in the end felt that keeping the current as posted title will better assist the industry in comprehending the scope of the requirements. The development of plans is one of the Reliability Coordinator’s actions to operate within IROLs.			
ATC	x		ATC agrees with the decision to combine standards IRO-009 and IRO-012 into a single standard.
Entergy	x		
Southern Co	x		
PSC of SC	x		
TVA	x		
IRC Standards Review Committee	x		
Pepco Holdings, Inc.	x		
IESO	x		
First Energy Corp	x		
NPCC CP9	x		

**Consideration of Comments on Draft 7 of the IROL Standards**

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<b>Question #2</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
ISO-NE	x		
Hydro-Québec TransÉnergie	x		
MISO SSC	x		

- The drafting team recommends moving the requirements from IRO-013 —Reliability Coordinator Directives Relative to IROLs into the project that will address communication protocols so that all requirements related to directives will be comprehensively addressed under the single Project 2007-02 – Operating Personnel Communication Protocols. Do you agree with moving the requirements from IRO-013 into Project 2007-02? If not, please explain.

**Summary Consideration:** Several commenters indicated that the description of Project 2007-02 should have been posted for review with the comment form. A full description of the Reliability Standards Work Plan 2007-2009 can be downloaded from the following site: [ftp://www.nerc.com/pub/sys/all\\_updl/standards/sar/FERC\\_Filing\\_Volumes\\_I-II-III\\_Reliability\\_Standards\\_Development\\_Plan\\_30Nov06.pdf](ftp://www.nerc.com/pub/sys/all_updl/standards/sar/FERC_Filing_Volumes_I-II-III_Reliability_Standards_Development_Plan_30Nov06.pdf)

The work plan includes a description of the project that will address communications protocols. The brief description (see page 114 of the work plan) of Project 2007-02 states:

This is a new project that was identified in support of a blackout recommendation #26. This standard will require the use of specific communication protocols, especially for communications during alerts and emergencies. The standard will be applicable to transmission operators, balancing authorities, reliability coordinators, generator operators and distribution providers.

Question #3			
Commenter	Yes	No	Comment
MRO		x	Project 2007-02 should have been included with this package for us to consider. The MRO is also concerned that there is a general trend to develop too many requirements and measures, which would become administratively burdensome to the ERO and the entities that must comply.
<b>Response:</b> Agreed. The project is described in the Long-range Plan for Development of Standards. The intent of the Operating Personnel Communication Protocols project is to eliminate redundant requirements, and to define a set of communication protocols for real-time use to improve situational awareness and reduce response time.			
MISO SSC		x	The project in question should have been posted with the package. The quality of responses to this item will likely be impaired as many will not have reviewed the intent of the plan.  We agree that clear communications are important and should be part of an operators overall training program. We have some concern about developing measures for the sake of having measures, particularly when they appear to require significant administration to track.
<b>Response:</b> Agreed. The project is described in the Long-range Plan for Development of Standards.			

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<b>Question #3</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Southern Co		x	It appears that R1 of IRO-013 would be more appropriately contained in the IRO standards. R1 of IRO-013 states: The BA, IA, and TOP shall each follow its RC's directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances the BA, IA or TOP shall immediately inform the RC of its inability to perform the directive so that the RC can implement alternate remedial actions. The directives covered by this requirement shall be those that:  R1.1. Prevent instances of exceeding interconnection reliability operating limits (IROLs). R1.2. Mitigate the magnitude and duration of instances of exceeding IROLs.
<b>Response:</b> Standard IRO-001-1 Requirement 8 has a requirement that mandates that Transmission Operators, Balancing Authorities, Generator Operators Transmission Service Providers Load-serving Entities and Purchasing-selling Entities comply with Reliability Coordinator directives. Including the requirement in both standards would be redundant.			
Manitoba Hydro		x	MH endorses MRO comments: Project 2007-02 should have been included with this package for us to consider. The MRO is also concerned that there is a general trend to develop too many requirements and measures, which would become administratively burdensome to the ERO and the entities that must comply.
<b>Response:</b> Agreed. The project is described in the Long-range Plan for Development of Standards.			
TVA		x	Since IRO-013 is not approved, then IRO-004-1 R7 should not be deleted until replaced. The redlined IRO-004-2 shows the entire standard to be retired.
<b>Response:</b> Standard IRO-001-1 Requirement 8 has a requirement that mandates that Transmission Operators, Balancing Authorities, Generator Operators Transmission Service Providers Load-serving Entities and Purchasing-selling Entities comply with Reliability Coordinator directives. This requirement does not have any limits on the time frame within which the Reliability Coordinator's directives must be followed – therefore IRO-004 R7 is redundant. Good observation.			
PSC of SC	x		
Entergy	x		
IRC Standards Review Committee	x		
Pepco Holdings, Inc.	x		
IESO	x		
First Energy Corp	x		
NPCC CP9	x		
ISO-NE	x		

**Consideration of Comments on Draft 7 of the IROL Standards**

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<b>Question #3</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Hydro-Québec TransÉnergie	x		



4. The drafting team is proposing that all standards and conforming changes become effective the first day of the first quarter, three months after regulatory approvals. Do you agree that the proposed effective date will give entities time to become fully compliant? If not, please explain.

**Summary Consideration:** Most commenters supported the proposed effective dates and these were not changed.

Question #4			
Commenter	Yes	No	Comment
MRO		x	It is difficult to prescribe one time window such as, three months after regulatory approvals. Different Standards might require different implementation times to allow the responsible entities to become fully compliant. For example, for those Standards that require equipment installation, it would take more than 3 months to satisfy the compliance requirements. Moreover, the Standards drafting team is the appropriate body to stipulate how much time is needed after regulatory approvals to become compliant.
<b>Response:</b> The three month window was proposed specifically for this set of standards by the drafting team – each drafting team proposes a unique implementation plan. This set of standards does not require any equipment installation.			
ATC		x	ATC believes that all standards and conforming changes should become effective the first day of the first quarter, six months after regulatory approvals.
<b>Response:</b> Some requirements in some other standards may require the acquisition and installation of equipment that isn't feasible in a six month time period.			
Southern Co		x	Does regulatory approvals only include FERC or does it also include the NERC Board?  A standard approved by the NERC Board, for example, on September 30 <sup>th</sup> would be implemented on January 1, which is too soon to prepare for. It might also be too soon even if it meant only FERC, since the NERC Board could approve September 29 <sup>th</sup> followed by FERC approval on September 30 <sup>th</sup> . In these instances, 6 months might be more appropriate.
<b>Response:</b> The NERC Board is not a regulatory agency, however only standards that have been approved by their ballot pool and by the NERC Board will be submitted to FERC and Canadian regulatory authorities. If a standard were approved by the NERC Board on September 30 <sup>th</sup> , the standard would be submitted to FERC and the Canadian regulatory authorities within a couple weeks (by mid October), and FERC and the Canadian regulatory authorities would take about 2 or 3 months to determine whether to approve the standards (by mid Jan)– and then the standard would become effective on the first calendar day of the first quarter 3 months after that – (the first day of the first quarter 3 months after mid Jan would be July 1). So – with the proposed implementation plan, the standards wouldn't become enforceable for almost a year after being approved by their Ballot Pool.			

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #4</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
MISO SSC		x	Since the drafting team is not yet formed and has not seen the final product, it is premature to set a short implementation date.
<p><b>Response:</b> We assume your comment is in response to the nomination form that was posted asking for additional members of the IROL Standard Drafting Team. This set of standards has been developed by the existing IROL Standard Drafting Team that has been in place for several years. While there was a posting asking for nominations for the IROL Standard Drafting Team, the posting was 'adding' members to the existing drafting team, not to develop a totally new drafting team.</p>			
Manitoba Hydro		x	MH endorses MRO comments: It is difficult to prescribe one time window such as, three months after regulatory approvals. Different Standards might require different implementation times to allow the responsible entities to become fully compliant. For example, for those Standards that require equipment installation, it would take more than 3 months to satisfy the compliance requirements. Moreover, the Standards drafting team is the appropriate body to stipulate how much time is needed after regulatory approvals to become compliant.
<p><b>Response:</b> The three month window was proposed specifically for this set of standards by the drafting team – each drafting team proposes a unique implementation plan. This set of standards does not require any equipment installation.</p>			
PSC of SC	x		
Entergy	x		
TVA	x		
IRC Standards Review Committee	x		
Pepco Holdings, Inc.	x		
IESO	x		
First Energy Corp	x		
NPCC CP9	x		
ISO-NE	x		
Hydro-Québec TransÉnergie	x		

5. The Drafting Team added a Violation Risk Factor for each requirement. Do you agree with the Violation Risk Factor for each requirement in the proposed standards? If not, please identify any requirement with a violation risk factor you feel is incorrect.

**Summary Consideration:** While most of the Violation Risk Factors were acceptable to most commenters, the drafting team did modify violation risk factor associated with IRO-010-1 R2. None of the other proposed changes were supported by the drafting team because they did not match the definitions provided for distinguishing between High, Medium and Lower Violation Risk Factors.

Question #5			
Commenter	Yes	No	Comment
MRO		x	<p>For many requirements, the VRFs are overstated. ERO has not given correct directives on how to assign VRFs. In addition, one cannot assign a single VRF for a requirement such as IRO-008-1 R3 that covers both Operational Planning Analysis, and real time assessment. In such instances, IRO -008-1 R3 should be split into two separate requirements, one dealing with Operational Planning Analysis, for which the VRF would be Medium and the other, addressing real time assessment for which the VRF would be High.</p> <p>For IRO-007-1 R2, the VRF should be Medium since not adopting the most conservative value for IROL or its Tv would not result in cascading outages.</p> <p>For IRO-010-1 Requirement R2, the VRF should be Low since it is an administrative item, and all that is needed is that the RC receives the status information.</p>
<p><b>Response:</b> Under the current, in-effect version of the Reliability Standards Development Procedure, drafting teams are assigned the responsibility of developing Violation Risk Factors using the definitions of High Medium and Lower Violation Risk Factors that were provided in the manual.</p> <p>The intent of IRO-008-1 R3 is to share the results – and the reliability-related impact to the interconnection is the same whether the results are from the Real-Time Assessment or the Operational Planning Analysis. This requirement doesn't concern taking actions to mitigate or prevent exceeding an IROL.</p> <p>Most commenters agreed with the rating for IRO-007-1 R2. The failure to respect what may be the accurate value of IROL or the IROL Tv could result in exceeding an IROL and the definition of an IROL is: A System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or Cascading Outages that adversely impact the reliability of the Bulk Electric System. The High rating is correct.</p> <p>The rating for IRO-010 R2 was modified to 'Lower' as suggested.</p>			
Southern Co	x	x	<p>Since the VRFs are being addressed through other ballots or procedures, and by the fact that this standard drafting team has no control over the VRFs, this question may be of no value to Industry.</p>
<p><b>Response:</b> Under the current, in-effect version of the Reliability Standards Development Procedure, drafting teams are</p>			

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #5</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
assigned the responsibility of developing Violation Risk Factors as the standard is developed. Until the process is formally modified, drafting teams will develop these VRFs and will collect stakeholder feedback on those VRFs.			
IRC Standards Review Committee NPCC CP9 ISO-NE Hydro-Québec TransÉnergie		x	(i) We agree with the VRFs for IRO-008, IRO-009 and IRO-010.  (ii) For IRO-007, the VRF for R1 should be HIGH. Real-time monitoring of system conditions to determine if system parameters are within IROLs is critical to ensuring interconnected system reliability. Lack of or insufficient monitoring would expose a system to unreliable operation.
<b>Response:</b> Making the distinction between High and Medium is a challenge – however failure to monitor does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures. Flows in excess of limits and voltages outside limits can cause bulk power system instability, separation, or a cascading sequence of failures. Monitoring does not preclude the requirement to assess the system to determine whether you have a stable system. The drafting team agrees that monitoring is of ‘high’ importance – but the VRFs are based on impact to the interconnected system, not on the importance of the activity. Monitoring is a supporting task that is essential to operating within IROLs – but the most critical requirements in this set are the requirements that address preventing or mitigating instances of exceeding IROLs.			
IESO		x	(i) We agree with the VRFs for IRO-008 and -010.  (ii) For IRO-007, the VRF for R1 should be HIGH. Real-time monitoring of system conditions to determine if system parameters are within IROLs is critical to ensuring interconnected system reliability. Lack of or insufficient monitoring would expose a system to potential unreliable operation.  (iii) For IRO-009, the VRFs for R1 and R2 should both be HIGH. The absence of pre-determined control actions that need to be made available to operation personnel to prevent and mitigate IROL violation can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (b), above.
<b>Response:</b> Making the distinction between High and Medium is a challenge – however failure to monitor does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures. Flows in excess of limits and voltages outside limits can cause bulk power system instability, separation, or a cascading sequence of failures. Monitoring does not preclude the requirement to assess the system to determine whether you have a stable system. The drafting team agrees that monitoring is of ‘high’ importance – but the VRFs are based on impact to the interconnected system, not on the importance of			

**Consideration of Comments on Draft 7 of the IROL Standards**

Question #5													
Commenter	Yes	No	Comment										
<p>the activity. Monitoring is a supporting task that is essential to operating within IROLs – but the most critical requirements in this set are the requirements that address preventing or mitigating instances of exceeding IROLs.</p> <p>Having action plans is important – but failure to have an action plan does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures.</p>													
MISO SSC		x	<p>We strongly disagree with the violation severity levels of attribute (yes/no go/no-go) requirements being arbitrarily placed in the Severe category. This places late reports in the same category as failure to correct an IROL. We don't treat jaywalking the same as grand theft. The sanctions matrix needs to be changed to have another level for attribute requirements. The sanctions need to be based on impact to reliability.</p> <p>We also disagree with the default approach to assigning severity levels to scalable standards (only 5% in the Low area, 70% of observations in the Severe category). This is the equivalent as applying the following highway speeding rules to cars that have a typical top end of 100MPH:</p> <table border="0"> <tr> <td>65 MPH or less</td> <td>Pass</td> </tr> <tr> <td>66 MPH</td> <td>Low</td> </tr> <tr> <td>67-69 MPH</td> <td>Moderate</td> </tr> <tr> <td>70-74 MPH</td> <td>High</td> </tr> <tr> <td>75-100 MPH or higher</td> <td>Severe</td> </tr> </table> <p>Scalable standards should be assigned severity levels that approach quartiles of the observed or expected range of performance.</p> <p>This approach to assigning violation severity levels to attribute and scalable requirements doesn't appear to have been presented for official comment in any stakeholder forum.</p>	65 MPH or less	Pass	66 MPH	Low	67-69 MPH	Moderate	70-74 MPH	High	75-100 MPH or higher	Severe
65 MPH or less	Pass												
66 MPH	Low												
67-69 MPH	Moderate												
70-74 MPH	High												
75-100 MPH or higher	Severe												
<p><b>Response:</b> We will share your recommendations with the Standards Committee but making changes to these guidelines is outside the control of the drafting team.</p> <p>The drafting team put great deliberation into the proposed VRFs.</p> <p>Violation Severity Levels are not the same as Violation Risk Factors. Violation Severity Levels measure the degree to which the entity 'missed' full compliance and is not a measure of the associated risk to reliability. Violation Risk Factors assess the reliability-related impact of violating a requirement.</p>													
Manitoba Hydro		x	<p>MH endorses MRO comments: It is difficult to prescribe one time window such as, three months after regulatory approvals. Different Standards might require different implementation times to allow the responsible entities to become fully compliant. For example, for those Standards that require equipment installation, it would take more than 3 months to satisfy the compliance requirements. Moreover, the Standards</p>										

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Question #5			
Commenter	Yes	No	Comment
			drafting team is the appropriate body to stipulate how much time is needed after regulatory approvals to become compliant.
<b>Response:</b> These comments appear to be in response to question 4 and were addressed there.			
Entergy		x	<p>IRO-008-1 R3 has two conditions: one the results of an Operational Planning Analysis, and one the results of a Real-Time Assessment. The Violation Risk Factor should be different for each of these two conditions. The VRF for the results of an Operational Planning Analysis should be MEDIUM, while the VRF for the results of a Real-Time Assessment should be HIGH.</p> <p>IRO-010-1 R1 requires the development of a documented specification for data and information while R2 requires distribution of that specification. Both R1 and R2 have VRFs of Medium. We suggest these two requirements be changed to LOWER. The development and distribution of a data specification is not a High or Medium risk factor.</p>
<b>Response:</b> The intent of IRO-009-1 R3 is to share the results – and the reliability-related impact to the interconnection is the same whether the results are from the Real-Time Assessment or the Operational Planning Analysis. This requirement doesn't concern taking actions to mitigate or prevent exceeding an IROL.			
For IRO-010-1 R2, the drafting team deliberated between Medium and Low and changed the rating to Low as you suggested.			
First Energy Corp	x		
TVA	x		
PSC of SC	x		

6. The Drafting Team added a Mitigation Time Horizon for each requirement. Do you agree with the Mitigation Time Horizon for each requirement in the proposed standards? If not, please identify any requirement with a time horizon you feel is incorrect.

**Summary Consideration:** Many commenters indicated a lack of familiarity with 'mitigation time horizons'. These were introduced in the ERO Rules of Procedure as one of the elements used to determine the size of a sanction. Requirements that must be mitigated in real-time operations would have a larger sanction than those that could be mitigated over a longer time period. The comment form provided a list of possible mitigation time horizons. The latest version of the Reliability Standards Development Procedure did not include mitigation time horizons – this was an omission in bringing the manual into conformance with the latest ERO Rules of Procedure and this omission should be corrected with the next (normal) revision to the manual. In the meantime, stakeholders will be asked to comment on and approve time horizons as they are developed with standards. The alternative is to have these time horizons identified outside the standard development process, and stakeholders indicated they wanted a voice in the selection of all the compliance elements within standards. *(Note that the term, 'mitigation time horizons' was modified by the Standards Committee and is now called, 'time horizons'.)*

Most commenters supported the proposed time horizons. However, based on stakeholder comments the drafting team did modify three of the time horizons:

- IRO-008-1 R3 was revised to include both Real-time Operations and Same-day Operations
- IRO-009-1 R1 was revised to include both Operations Planning or Same Day Operations
- IRO-009-1 R2 was revised to include both Operations Planning or Same Day Operations

Question #6			
Commenter	Yes	No	Comment
MRO Manitoba Hydro		x	<p>Mitigation Time Horizons are described near the top of this comment form.</p> <p>The description of the Mitigation Time Horizons states: The ERO Rules of Procedure include the use of mitigation time horizons as one element used to determine the size of sanctions.</p> <p>Can the drafting team inform the Registered Ballot Body where the ERO definition of Mitigation Time Horizons can be found along with documentation describing how the mitigation time horizons will be used in determining penalties. Mitigation Time Horizons are not listed as a Performance Element of a Reliability Standard in the Reliability Standards Development Procedure Version 6 adopted by the NERC BOT on November 1, 2006. As such, it does not seem appropriate to include them in any Reliability Standards.</p> <p>The comment form description of Mitigation Time Horizons further states The drafting</p>

Consideration of Comments on Draft 7 of the IROL Standards

Question #6			
Commenter	Yes	No	Comment
			<p>team used the following guidelines in developing mitigation time horizons for each requirement, whereas the final statement in the description of the Violation Risk Factors states The following categories of violation risk factors were approved with the latest version of the Reliability Standards Development Procedure. Like the Violation Risk Factors, the categories of Mitigation Time Horizons should also be approved and incorporated into the Reliability Standards Development Procedure in order to ensure that the definitions are consistent for all NERC Reliability Standards.</p> <p>The MRO cannot vote to approve a standard that includes Mitigation Time Horizons until the drafting team can produce ERO documented definitions and the documented manner in which the Mitigation Time Horizons will be used to determine penalties.</p>
<p><b>Response:</b> Time horizons were introduced in the ERO Rules of Procedure (Sanctions Guidelines) as one of the elements used to determine the size of a sanction. Requirements that must be mitigated in real-time operations would have a larger sanction than those that could be mitigated over a longer time period. The comment form provided a list of possible mitigation time horizons. The latest version of the Reliability Standards Development Procedure did not include mitigation time horizons – this was an omission in bringing the manual into conformance with the latest ERO Rules of Procedure and this omission should be corrected with the next (normal) revision to the manual. In the meantime, stakeholders will be asked to comment on and approve time horizons as they are developed with standards. The alternative is to have these time horizons identified outside the standard development process, and stakeholders indicated they wanted a voice in the selection of all the compliance elements within standards. The drafting team is obligated to use the definitions for time horizons that were posted with the comment form.</p>			
Southern Co		x	<p>The time horizon of Operations Planning related to Mitigation Time Horizons (day-ahead up to and including seasonal) is different from the time horizon used in the definition of IRO-008-1 Operational Planning Analysis (which is the next day's operation and up to 12 months ahead). Additionally, some utilities interpret Operations Planning as real time up to day ahead studies. This creates confusion with the term Operations Planning and Southern seeks clarification for the term.</p> <p>Secondly, since each requirement's time horizon appears to be contemplated within the standard itself and reflected in the assignment of the Violation Risk Factor and Violation Severity Level, Southern believes including this characteristic in the penalty adjustment process is not necessary. Therefore, we believe the Mitigation Time Horizons should NOT be a penalty adjustment factor in determining monetary penalties for non compliance.</p>
<p><b>Response:</b> The drafting team is obligated to use the definitions for time horizons that were posted with the comment form. The time horizons are part of the ERO Rules of Procedure (Sanctions Guidelines) and the drafting team cannot change these.</p>			



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Question #6			
Commenter	Yes	No	Comment
Entergy		x	<p>IRO-008-1 R3 has two conditions: one the results of an Operational Planning Analysis, and one the results of a Real-Time Assessment. The Mitigation Time Horizon should be different for each of these two conditions. The MTH for the results of an Operational Planning Analysis should be Operations Planning, while the MTH for the results of a Real-Time Assessment should be Real-Time Operations.</p> <p>IRO-010-1 R1 requires the development of a documented specification for data and information while R2 requires distribution of that specification. Both R1 and R2 have MTHs of Operations Planning. We suggest these two requirements be changed to Long-term Planning. The development and distribution of a specification should be developed and distributed long before it is needed.</p>
<p><b>Response:</b> The drafting team adopted your suggestion as a technical improvement to the time horizons – the information is shared as you suggest in two different time horizons.</p> <p>For IRO-010-1 R1: The time horizon is the time frame in which a violation could be corrected – and the operations planning horizon is the correct time frame for R1. The data and information are expected to be used within a year of receipt.</p>			
IRC Standards Review Committee Pepeco Holdings, Inc. IESO NPCC CP9 ISO-NE Hydro-Québec TransÉnergie		x	<p>(i) We agree with the mitigation time horizons for IRO-007, -008 and -010.</p> <p>(ii) For IRO-009, however, R1 and R2 should also be assigned a Same Day Operation time horizon since "identified in advance of real time" may include day at hand assessments.</p>
<p><b>Response:</b> The drafting team modified the time horizons of IRO-009-1 R2 and R3 to include both same day and operations planning as suggested.</p>			
MISO SSC		x	<p>The meaning of Operations Assessment needs to be clarified. There is no indication of the relative impacts the drafting team considered for each mitigation time horizon. I would assume that a violation of a standard in the Real-Time Operations horizon would be considered worst than a violation in the Operations Planning Horizon. If this is the case, the standard needs to specify this. How does the team see Operations Assessment horizon fitting in?</p>
<p><b>Response:</b> The 'operations assessment' time horizon is looking at the 'post operations' time frame. The drafting team looked at each requirement and tried to identify the timeframe available to mitigate a violation. According</p>			

**Consideration of Comments on Draft 7 of the IROL Standards**

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<b>Question #6</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			to the sanctions guidelines, the violation of a requirement with a real-time operations horizon would be subject to a larger fine than the violation of a requirement with an operations planning horizon. The ERO Rules of Procedure include information on how sanctions will be calculated.
First Energy Corp	x		
TVA	x		
PSC of SC	x		

7. The latest version of the Reliability Standards Development Procedure Manual requires that each standard include ‘violation severity levels’ rather than ‘levels of non-compliance’. ‘Violation severity levels’ identify how badly an entity violated each requirement, and are not linked to the reliability-related impact of violating a requirement. (The reliability-related impact of violating a requirement is now identified in the ‘Violation Risk Factor’ appended to each requirement.) Note that these severity levels are ‘guidelines’ and variations from the above categories are acceptable.

Do you agree with the Violation Severity Levels for each of the proposed standards? If you disagree with any of the Violation Severity Levels for the proposed standards, please identify the standard and requirement you feel has an incorrect Violation Severity Level.

**Summary Consideration: (This question was asked by the Compliance Elements Drafting Team (CEDT) and the responses were provided by the CEDT)**

Many of the commenters agreed that the use of a percentage of how many identified IROLs had Operating Processes, Procedures, or Plans to prevent or mitigate the IROL seemed inappropriate when determining how severe a violation was. The drafting teams also agree there is no justifiable reason for a known IROL not to have Operating Processes, Procedures, or Plans to prevent or mitigate the IROL. Based on this, IRO-009 was modified so that if a Reliability Coordinator has any identified IROLs that do not have Operating Processes, Procedures, or Plans to prevent or mitigate the IROL, it will be a severe violation. Some commenters were concerned about the measurability of the term, ‘without delay’ and the CEDT modified the violation severity levels to allow some short period of time between the recognition that an IROL has been exceeded (an alarm) and the time that the Reliability Coordinator either takes a control action or issues a directive to others. As revised, if the Reliability Coordinator does not either take a control action or issue a directive 5 minutes after exceeding an IROL, that is a Severe violation. The 5 minutes is not intended as a ‘grace period’ in which the Reliability Coordinator can delay taking any action – the 5 minutes recognizes that the Reliability Coordinator may need a couple of minutes to collect data, and the data collection doesn’t necessarily result in actions that can be independently confirmed. Analyzing data from dynamic wall board displays, exchanging verbal information, scanning screen displays are typical methods of collecting data to assess the situation before taking a control action but don’t result in log entries or voice recordings that can be measured.

In addition, IRO-010 was modified to remove a perceived “gap” in the percentage ranges.

Question #7			
Commenter	Yes	No	Comment
MRO		x	The way the Violation Severity levels are spelled out, it again appears to be arbitrary cut offs, and especially the High and Severe Violation Severity Levels have to be tightly defined so that the entities would know what actions to take to be compliant.
<b>Response:</b> IRO-009 was modified to remove the percentage cutoffs. In addition, IRO-010 was modified to eliminate a			

Question #7			
Commenter	Yes	No	Comment
perceived "gap" in the percentage range. The percentages attempt to identify lower level violations up to severe level violations according to how much the entity missed the requirement.			
Entergy			The VSLs in IRO-009 and IRO-010 have gaps between the low end of LOW (e.g. 95%) and the high end of MODERATE (e.g. 94%) with a similar gap in other VSLs. Why is there this gap? If the argument is that the ranges are whole numbers then it may be OK. However, it seems there should not be a gap and we suggest closing those gaps by writing the VSL with - greater than and equal to - and - less than - specifications.
<b>Response:</b> IRO-009 was modified to remove the percentages. IRO-010 was modified to close the gaps with greater than and equal to – and – less than – specifications per your suggestion			
Southern Co		x	Let's say a Reliability Coordinator (RC) who performs admirably throughout the year has only one identifiable IROL for the year. However, due to one reason or another, the RC does not have a procedure in advance that identifies actions to prevent the instance from exceeding the IROL. This results in a SEVERE violation level.  Now, let's say a RC who does less than an admirable job throughout the year and has multiple (50) identifiable IROLs for the year. This RC is allowed approximately 8 instances of not having a procedure which identified actions to prevent exceeding the IROL, and this RC only achieves a MODERATE violation level. There needs to be some type of rewarding mitigation factor for those RCs who have very few identifiable IROLs.
<b>Response:</b> Agreed – every instance of failure to fully meet these requirements is severe.  There is no acceptable justification for identifying a limit that could cause instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection and not having a plan to either prevent or mitigate the IROL.			
Manitoba Hydro		x	endorses the MRO comments: The way the Violation Severity levels are spelled out, it again appears to be arbitrary cut offs, and especially the High and Severe Violation Severity Levels have to be tightly defined so that the entities would know what actions to take to be compliant.
<b>Response:</b> IRO-009 was modified to remove the percentage cutoffs. In addition, IRO-010 was modified to eliminate a perceived "gap" in the percentage range. The percentages attempt to identify lower level violations up to severe level violations according to how much the entity missed the requirement.			
ATC		x	Many of the requirements need to be clarified before we can determine the appropriateness of the violation severity levels.  See our comments under question 15.

Question #7			
Commenter	Yes	No	Comment
<p><b>Response:</b> The Compliance Elements Drafting Team believes the severity levels are correct as modified and do support the requirements.</p>			
<p>IRC Standards Review Committee Pepco Holdings, Inc. IESO NPCC CP9 ISO-NE Hydro-Québec TransÉnergie</p>		x	<p>(i) We agree with the violation severity levels for IRO-007 and IRO-008.</p> <p>(ii) For IRO-009, the violation level is subject to interpretation. For example, "Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs." Does the 95% to 99% range apply to the number of IROLs identified, or to the total time that any IROLs are identified? In other words, is it the percentage of time that for all IROLs identified, there are Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding any IROLs?</p> <p>To put the violation severity level in a more proper context, the SDT may want to consider putting the range in a "negative sense", i.e., the percentage of time that the requirements are not met, whichever the base of the above interpreted measurements turn out to be.</p> <p>Better still, we suggest the SDT consider adopting violation severity levels based on the number of times that R1 or R2 is not met, i.e. the number of times that, for any IROLs that are identified in advance of real-time, there lacks operating processes, procedures, or plans that identify actions to prevent or mitigate instances of exceeding these IROLs. This way, assessment of violations can be made much more easily. Further, the severity level will be independent of the total number of IROLs identified, which can eliminate the skewed assessment due to a small of number of IROLs identified in an RC area. For example, under the as written % assessment structure, an RC could be found 0% compliant (and hence assessed a severe violation level) for just one incident of not meeting R1 or R2 if it had only one IROL identified.</p> <p>(iii) For IRO-010, we agree with the measures as they are based on numbers, not a combination of number and duration. However, the same comment on "negative context" as provided for IRO-009 also apply here. In other words, we suggest turning the % meeting requirements to % failing to meet requirements (hence violation).</p>
<p><b>Response:</b>                      (i) Thank you                      (ii) IRO-009 was modified to remove the percentages.                      (iii) IRO-010 was modified to close the gaps with greater than and equal to – and – less than – specifications, but kept the original percentages.</p>			

Consideration of Comments on Draft 7 of the IROL Standards

Question #7			
Commenter	Yes	No	Comment
First Energy Corp		x	IRO-009-1 Violation Severity Level 2.3.2 should read as follows "... delay of 5 minutes or greater before acting or directing ..."
<p><b>Response:</b> The Compliance Elements Drafting Team (CEDT) agrees that a time needs to be spelled out for delay, and also agrees that some time needs to be given so that the Reliability Coordinator can think through the plan and ensure that the actions they are implementing are correct and will not cause other issues in the system. However, this timeframe for delay can not be open ended lest someone try and claim that a failure to act until three hours had passed was simply a delay, and not a failure to take action. The CEDT believes that a 5 minute upper limit is appropriate in this case and has modified the standard accordingly.</p>			
MISO SSC		x	The compliance percentage leaves gaps from 94-95% and from 84-85%. What is the justification for these percentages?
<p><b>Response:</b> IRO-009 was modified to remove the percentages. IRO-010 was modified to close the gaps with greater than and equal to – and – less than – specifications.</p>			
TVA	x		
PSC of SC	x		

8. The implementation plan modifies several requirements in already approved standards because compliance with those requirements does not seem practical. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits – yet there are requirements that hold the Reliability Coordinator accountable for identifying the cause of any actual or potential SOL. The drafting team reviewed these requirements and made proposed modifications to limit the Reliability Coordinator’s accountability for real-time actions relative to SOLs. Do you agree with the drafting team’s approach?

**Summary Consideration:** While several commenters disagree with this change, most of the comments provided indicate a misunderstanding of the intent of the proposed change. The intent of the change is not to remove the Reliability Coordinator’s accountability for responding to any SOLs but to clearly identify that the **primary** responsibility for resolving SOLs rests with the Transmission Operator. The Reliability Coordinator does not monitor all facilities in its area that are subject to SOLs, but the Reliability Coordinator does monitor some of the facilities within each Transmission Operator’s area. The Reliability Coordinator is expected to monitor the SOLs associated with facilities that are within each Transmission Operator’s area that have been identified as potentially becoming IROLs. If a Reliability Coordinator has data that shows there is an operating problem, the Reliability Coordinator is not obligated **under these standards** to take action – however the Reliability Coordinator’s obligation **under all conditions** is to take action to preserve the reliability of the interconnection.

Based on stakeholder comments, the drafting team did modify IRO-005-3 R12 by deleting the parenthetical reference to SOL.

Question #8			
Commenter	Yes	No	Comment
Entergy		x	We agree that the RC should not be held responsible to identify the cause of any actual or potential SOL for which he is not monitoring the information. However, if he is monitoring the parameters associated with a SOL he does have an obligation to act on that information and should be held accountable. Therefore, a blanket reprieve for not acting on known information is not acceptable.
<p><b>Response:</b> There is a Transmission Operator with responsibility for every SOL and the Transmission Operator is accountable for acting to resolve its SOLs.                      If a Reliability Coordinator has data that shows there is a problem, the Reliability Coordinator is not obligated under these standards to take action – however the Reliability Coordinator’s obligation is to take action to preserve the reliability of the interconnection.</p>			
Southern Co		x	One can never tell when an SOL will turn into an IROL. In fact, there may be several SOLs occurring at the same time which may turn into an IROL. What the drafting team is recommending in this standard is for the RC to no longer monitor or study SOLs even though NERC standards currently require them to. This seems contradictory to NERC’s goal of maintaining a reliable BES.

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #8</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			<p>Also, there are contradictory statements throughout the standard which require the RC to coordinate and communicate SOLs to the TSPs. However, according to the changes recommended in this standard, the RC will no longer be required to monitor SOLs. One such occurrence is in IRO-005-3, in which R11 states the RC shall make known to the TSPs in its wide-area view all SOLs and IROLs. How does the drafting team expect the RCs to make the TSPs aware of all SOLs when the RC is not expected to monitor or study the SOLs?</p> <p>Southern Co. Transmission recommends that the RC continue to monitor and study SOLs as the current standards require. The August 2003 Blackout resulted, in part, from the RCs not monitoring and studying SOLs within its wide-area view. To move away from this concept will make the BES more vulnerable to a possible future blackouts.</p>
<p><b>Response:</b>                      There is a Transmission Operator with responsibility for every SOL and the Transmission Operator is accountable for acting to resolve its SOLs. The Reliability Coordinator isn't required to monitor all facilities within each Transmission Operator's area that has an SOL. The Reliability Coordinator does monitor some but not all of the facilities within each Transmission Operator's area. The Reliability Coordinator is expected to monitor the SOLs associated with facilities that are within each Transmission Operator's area that have been identified as potentially becoming IROLs.</p> <p>Under FAC-014, the Reliability Coordinator is obligated to ensure that SOLs are developed according to the Reliability Coordinator's SOL Development Methodology. Under most cases, the Transmission Operator develops the SOLs and submits them to the Reliability Coordinator and then the Reliability Coordinator submits the applicable SOLs (and IROLs) to the Transmission Service Provider.</p>			
ATC		x	<p>ATC does not agree with the proposed modifications to existing NERC standards. It's our opinion that Reliability Coordinators should monitor both SOLs and IROLs within their area. The Reliability Coordinators provide an additional level of system oversight that ensures the reliable operations of the bulk power system. A strict interpretation by Reliability Coordinators would lead them to only monitor pre-determined IROLs and they would be unable to determine if an SOL becomes an IROL in real-time.</p> <p>ATC does not believe that the proposed changes to existing standards have anything to do with these standards. The proposed standards are not replacing the requirements in the existing standards but are only adding on new requirements that address IROLs. The SDT is overstepping the spirit of the IROL SAR and seems to be adjusting existing standards for some unexplained reason. If the SDT believes that these changes are appropriate then they should sponsor a SAR and allow for full industry participation.</p> <p>It's our opinion that the propose changes to existing standards will leave that bulk power</p>



Consideration of Comments on Draft 7 of the IROL Standards

Question #8			
Commenter	Yes	No	Comment
			<p>system in a less reliable state, and we ask that the SDT abandon this effort and move the proposed changes to a SAR. Once in a SAR the industry will be able to better exam the effects of the changes.</p> <p>Lastly ATC believes that changes in monitoring of SOL may impact the ability of Reliability Coordinators to call TLRs. If they are not required to monitor SOLs then identification will be the sole responsibility of Transmission Operators with no confirmation from RCs before a TLR is started.</p>
<p><b>Response:</b> There is a Transmission Operator with responsibility for every SOL and the Transmission Operator is accountable for acting to resolve its SOLs. The Reliability Coordinator isn't required to monitor all facilities within each Transmission Operator's area that has an SOL. The Reliability Coordinator does monitor some but not all of the facilities within each Transmission Operator's area. The Reliability Coordinator is expected to monitor the SOLs associated with facilities that are within each Transmission Operator's area that have been identified as potentially becoming IROLs. Nothing in these standards precludes the Reliability Coordinator from calling a TLR.</p>			
TVA		x	<p>FAC-011-1 R1 (which is effective 10/01/2007) requires the Reliability Coordinator to have a documented methodology for use in developing SOLs within its Reliability Coordinator Area.</p> <p>TOP-007-0 R4 requires the Reliability Coordinator to evaluate actions taken to resolve SOL violation, and if the actions taken are not appropriate or sufficient, direct actions required to return the system to within limits.</p> <p>Existing IRO-002-1 R5 and R8 (which still exist in the proposed IRO-002-2 as R4 and R6) require the Reliability Coordinator to have detailed real-time monitoring to ensure that potential or actual SOL violations are identified. These requirements require the Reliability Coordinator to be aware of all SOLs.</p> <p>We agree with the concept to clarify the accountabilities between the Transmission Operator and the Reliability Coordinator for real-time actions relative to SOLs, but it is inaccurate to state that the Reliability Coordinator is not required to see all SOLs. The Transmission Operator should be pro-active in mitigating SOL violations (real-time and calculated first contingency), in coordination with the Reliability Coordinator. The Reliability Coordinator must be aware of all SOL violations in order to direct action when needed to do so.</p>
<p><b>Response:</b> Although FAC-011-1 does require the Reliability Coordinator to have a methodology for developing SOLs, FAC-014-1 does not require the Reliability Coordinator to develop SOLs – FAC-014-1 R1 requires the Reliability Coordinator to 'ensure that SOLs, including Interconnection Reliability Operating Limits (IROLs), for its Reliability Coordinator Area are established and that the SOLs (including Interconnection Reliability Operating Limits) are consistent with its SOL</p>			

Consideration of Comments on Draft 7 of the IROL Standards

Question #8			
Commenter	Yes	No	Comment
<p>Methodology. '</p> <p>TOP-007-0 R4 is referring to the SOLs identified in TOP-007-0 R1 which are identified by the Transmission Operator. TOP-007 R1 states, "R1. A Transmission Operator shall inform its Reliability Coordinator when an IROL or SOL has been exceeded and the actions being taken to return the system to within limits."</p> <p>TOP-007 R4 states, "R4. The Reliability Coordinator shall evaluate actions taken to address an IROL or SOL violation and, if the actions taken are not appropriate or sufficient, direct actions required to return the system to within limits."</p> <p>The drafting team did recommend in its implementation plan that IRO-002-1 R4 and R6 be retired to eliminate the confusion associated with assigning the same requirement to different functional entities.</p> <p>There is a Transmission Operator with responsibility for every SOL and the Transmission Operator is accountable for acting to resolve its SOLs. The Reliability Coordinator isn't required to monitor all facilities within each Transmission Operator's area that has an SOL. The Reliability Coordinator does monitor some but not all of the facilities within each Transmission Operator's area. The Reliability Coordinator is expected to monitor the SOLs associated with facilities that are within each Transmission Operator's area that have been identified as potentially having IROLs.</p> <p>Under TOP-007-0 R1, the Reliability Coordinator should be informed of actions the Transmission Operator has taken in response to exceeding its SOLs.</p>			
Manitoba Hydro	X		However, the drafting team should ensure that where the RC's accountability has been limited or removed regarding real-time actions relative to SOLs, the accountability of the appropriate entity, e.g. transmission operator is covered by or added to another standard. This will ensure no reliability gaps are created.
<p><b>Response:</b> The drafting team left in place the Transmission Operator's requirements for responding to SOLs to ensure that there is a clear accountability for resolving SOLs.</p>			
IRC Standards Review Committee Pepco Holdings, Inc. ISO-NE Hydro-Québec TransÉnergie NPCC CP9	X		There are a number of requirements in the posted IRO-005-3 that still hold the RC responsible for being aware of and directing actions when a SOL is being approached or violated. The drafting team's proposed approach would require that corresponding changes be made to IRO-005-3.
<p><b>Response:</b> The drafting team found 4 instances in the subject standard where a requirement still references an 'SOL' in</p>			

Consideration of Comments on Draft 7 of the IROL Standards

Question #8			
Commenter	Yes	No	Comment
<p>association with a Reliability Coordinator.                      For R6 – the requirement is for the Reliability Coordinator to coordinate with the Transmission Operator to resolve the SOL.                      For R9 – the objective of the requirement is clear, but the wording needs modification. The revision is outside the scope of the SAR assigned to this drafting team. Modifications to IRO-005 are included in the draft SAR for Reliability Coordination.                      For R11- the Reliability Coordinator gives SOLs to the Transmission Service Provider. As envisioned, these are SOLs that the Reliability Coordinator receives from the Transmission Operator. This supports the same responsibilities for distribution of SOLs as required in FAC-014.                      For R12, the drafting team modified the parenthetical to omit the reference to SOL. This supports your suggestion.</p>			
IESO	x		<p>There are a number of requirements in the posted IRO-005-3 that still hold the RC responsible for being aware of and directing actions when a SOL is being approached or violated. The drafting team's proposed approach would require that corresponding changes be made to IRO-005-3.</p> <p>On the other hand, we feel that while the RC is not required to monitor these SOLs, they need to continue to be provided the information on the results of SOL determination and assessment as currently stipulated in R11 of TOP-002-2 since SOLs may become IROLs under certain conditions as determined by the RC.</p>
<p><b>Response:</b> The drafting team found 4 instances in the subject standard where a requirement still references an 'SOL' in association with a Reliability Coordinator.                      For R6 – the requirement is for the Reliability Coordinator to coordinate with the Transmission Operator to resolve the SOL.                      For R9 – the objective of the requirement is clear, but the wording needs modification. The revision is outside the scope of the SAR assigned to this drafting team. Modifications to IRO-005 are included in the draft SAR for Reliability Coordination.                      For R11- the Reliability Coordinator gives SOLs to the Transmission Service Provider. As envisioned, these are SOLs that the Reliability Coordinator receives from the Transmission Operator. This supports the same responsibilities for distribution of SOLs as required in FAC-014.                      For R12, the drafting team modified the parenthetical to omit the reference to SOL. This supports your suggestion.                      The drafting team also agrees with your last statement.</p>			
First Energy Corp	x		
MISO SSC	x		
PSC of SC	x		
MRO	x		

9. The Drafting Team is recommending that when IRO-007-1 is approved, conforming changes be made to the following standards:  
 IRO-002-1 — RC – Facilities; Retire R6  
 IRO-003-2 — RC – Wide Area View; Retire R1 and R2  
 IRO-005-2 — RC – Current Day Operations; Retire R1; Convert R1.1 into a Reference; Modify R13 part 2  
 TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R2  
 Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

**Summary Consideration:** While many commenters did indicate support for these changes, several other commenters indicated they don't support these changes and a variety of reasons were provided. The drafting team is hopeful that the explanations provided will improve consensus on this issue.

Question #9			
Commenter	Yes	No	Comment
MRO		x	The MRO agrees with the SDT in striking the first part of IRO-005-2 since it is already covered in FAC-014-R5.1. However, the MRO does not agree with the proposed revision to the second part that states: The Transmission Service Providers shall respect SOLs and IROLs in accordance with filed tariffs..... Since the RC may not know all SOLs and IROLs, it is not possible for the RC to make the TSP aware of what the RC itself does not know. The MRO recommends the SDT amend the proposed revision to state: The Transmission Service Provider shall respect all KNOWN SOLs and IROLs in accordance with.....
<b>Response:</b> Note that the proposed revision is outside the scope of work assigned to this drafting team. The drafting team can only make conforming changes to standards that are needed to support the work done with the new set of standards.			
Entergy		x	IRO-007-1 R1 contains the requirement that the RC - ... perform Real-Time Monitoring of system operating parameters ... Given the propensity of industry participants to re-interpret meanings to their own interpretation, we strongly suggest the term CONTINUOUS be added to the requirement so R1 would read - ... perform CONTINUOUS Real-Time Monitoring of system operating parameters ...  We believe there should be a minimum set of information required to be monitored by the Reliability Coordinator and that minimum set should be specified in the standards. This version, V7, of these IRO standards would remove all specification of any

Question #9			
Commenter	Yes	No	Comment
			<p>parameters to be monitored by the RC and place a list of some information in a Technical Reference. In addition, it is our understanding that Technical References and information contained in those References are not mandatory on the industry. The reason given for not including the list in the standard is "The list of parameters to monitor (IRO-005-2 R1.1 through R1.10) does not identify all parameters to monitor and can be misleading." The wording in IRO-005-2 R1 contains the phrase INCLUDING BUT NOT LIMITED TO THE FOLLOWING. A person must have some objective in mind other than conforming to the standard if he claims to not understand the meaning of, or can be misled by, the phrase INCLUDING BUT NOT LIMITED TO THE FOLLOWING.</p> <p>Therefore, we suggest deleting the Technical Reference and adding the following list and common English usage phrases back into the standards at the end of IRO-007-1 R1:</p> <p>THOSE SYSTEM OPERATING PARAMETERS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:</p> <p>R1.1 Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.</p> <p>R1.2 Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.</p> <p>R1.3 Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.</p> <p>R1.4 System real and reactive reserves (actual versus required).</p> <p>R1.5 Capacity and energy adequacy conditions.</p> <p>R1.6 Current ACE for all its Balancing Authorities.</p> <p>R1.7 Current local or Transmission Loading Relief procedures in effect.</p> <p>R1.8 Planned generation dispatches.</p> <p>R1.9 Planned transmission or generation outages.</p> <p>R1.10 Contingency events.</p>

Consideration of Comments on Draft 7 of the IROL Standards

Question #9			
Commenter	Yes	No	Comment
<p><b>Response:</b></p> <p>The drafting team assumes that you are concerned that there be a person at a console that is monitoring system conditions. There are other requirements in other standards that require 24/7 staffing of the real-time system operating position with a certified system operator.</p> <p>Most stakeholders seemed to support moving the list of possible elements to a technical reference.</p>			
Southern Co		x	<p>Southern Co. believes that the RC should monitor BES elements that could result in SOLs and IROLs. We believe the RC should know the current status of critical facilities whose failure could result in an SOL and IROL.</p> <p>Therefore, we recommend keeping all the requirements being recommended for retirement.</p>
<p><b>Response:</b> The requirement in IRO-007-1 for the Reliability Coordinator to monitor parameters says:</p> <ul style="list-style-type: none"> <li>- The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their <b>associated</b> Interconnection Reliability Operating Limits (IROLs).</li> </ul> <p>There is a Transmission Operator with responsibility for every SOL and the Transmission Operator is accountable for acting to resolve its SOLs. The Reliability Coordinator isn't required to monitor all facilities within each Transmission Operator's area that has an SOL. The Reliability Coordinator is expected to monitor parameters associated with facilities that have been identified as potentially having IROLs.</p>			
Manitoba Hydro		x	<p>If we are removing the monitoring of SOL from the RC's responsibility how can IRO-005-0 R11 be true. The RC can not make known to Transmission Service Providers all SOLs. This Requirement needs to be edited. Possibly along the lines of:</p> <p>R11. Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, all IROLs and known SOLs within its wide-area view. The Transmission Service Providers shall respect IROLs and all known SOLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p>Also, MH endorses the MRO comments: The MRO agrees with the SDT in striking the first part of IRO-005-2 since it is already covered in FAC-014-R5.1. However, the MRO does not agree with the proposed revision to the second part that states: The Transmission Service Providers shall respect SOLs and IROLs in accordance with filed tariffs..... Since the RC may not know all SOLs and IROLs, it is not possible for the RC to make the TSP aware of what the RC itself does not know. The MRO recommends the SDT amend the proposed revision to state: The Transmission Service Provider shall respect all KNOWN</p>

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #9</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			SOLs and IROLs in accordance with.....
<p><b>Response:</b> The proposed changes do not remove the Reliability Coordinator’s responsibility for monitoring system parameters that lead to all SOLs – we are removing the RC as the entity with <b>primary</b> responsibility for monitoring parameters that lead to SOLs. The Reliability Coordinator isn’t required to monitor <b>all</b> facilities that could have an SOL. The Reliability Coordinator is expected to monitor parameters associated with facilities that have been identified as potentially having IROLs.</p> <p>Under FAC-014, the Reliability Coordinator is obligated to ensure that SOLs are developed according to the Reliability Coordinator’s SOL Development Methodology. Under most cases, the Transmission Operator develops the SOLs and submits them to the Reliability Coordinator and then the Reliability Coordinator submits the applicable SOLs (and IROLs) to the Transmission Service Provider.</p> <p>The drafting team can only make conforming changes to the standards that are related to the work of the SAR assigned to this drafting team.</p>			
ATC		x	<p>IRO-007 states that Reliability Coordinators should monitor IROLs within their area.</p> <p>ATC does not believe that the changes to the four listed requirements have anything to do with IRO-007. In other words IRO-007 is not replacing the existing requirements, therefore the SDT has no authority to delete these requirements.</p> <p>It's ATC opinion that the SDT should only modify existing requirements that are in direct alignment with their work. In other words they should only alter those existing requirements that are being replaced with new requirements.</p> <p>If the SDT disagrees with ATC then they need to explain how IRO-007 is replacing the above listed requirements.</p>
<p><b>Response:</b></p> <p>The implementation plan provides an explanation of the drafting team’s justification for retiring or revising the associated requirements.</p> <ul style="list-style-type: none"> <li>When IRO-007-1 becomes effective, IRO-002-1 R6 should be retired.</li> </ul> <p>IRO-002-1 R6 identifies some, but not all of the parameters to be monitored by the Reliability Coordinator and can be misleading. A list of elements to be monitored (from IRO-005-2) has been converted into a Technical Reference.</p> <ul style="list-style-type: none"> <li>When IRO-007-1 becomes effective, IRO-003-2 should be retired.</li> </ul> <p>The Transmission Operator, not the Reliability Coordinator, is responsible for operating within System Operating Limits. The Reliability Coordinator is responsible for operating within IROLs.</p> <p>When IRO-008-1 becomes effective, IRO-005-2 R1 should be retired and R1.1 through R1.10 should be converted into a Technical Reference.</p>			

Consideration of Comments on Draft 7 of the IROL Standards

Question #9			
Commenter	Yes	No	Comment
<p>IRO-005-2 R1 is duplicated with IRO-007-1 R1. The list of parameters to monitor (IRO-005 -2 R1.1 through R1.10) does not identify all parameters to monitor and can be misleading.</p> <ul style="list-style-type: none"> <li>When IRO-007-1 and IRO-009-1 become effective, IRO-005-2 R13 should be retired.</li> <li>IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.</li> </ul> <p>The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-007-1 R2 has a similar requirement that is applicable totally to the Reliability Coordinator.</p>			
First Energy Corp		x	The revised IRO-005 requirement 10 (formerly Requirement 13) should be moved to TOP-004 Transmission Operations since it now only pertains to Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities.
<p><b>Response:</b> Agreed. Moving the requirements as proposed is outside the scope of this drafting team – this should be addressed as part of the Three-year Plan for Standards Development under the Project 2007-03.  <a href="ftp://www.nerc.com/pub/sys/all_updl/standards/sar/FERC_Filing_Volumes_I-II-III_Reliability_Standards_Development_Plan_30Nov06.pdf">ftp://www.nerc.com/pub/sys/all_updl/standards/sar/FERC_Filing_Volumes_I-II-III_Reliability_Standards_Development_Plan_30Nov06.pdf</a></p>			
MISO SSC		x	Requirement R11 in Standard IRO-005-3 contradicts question 8 in the comment form. It requires the RCs to notify TPs of "SOLs and IROLs within its wide-area view". Question 8 recognizes that RCs may not have all the information for SOLs so how can they be held accountable to communicate it? This requirement needs to be eliminated.
<p><b>Response:</b> Under FAC-014, the Reliability Coordinator is obligated to ensure that SOLs are developed according to the Reliability Coordinator's SOL Development Methodology. Under most cases, the Transmission Operator develops the SOLs and submits them to the Reliability Coordinator and then the Reliability Coordinator submits the applicable SOLs (and IROLs) to the Transmission Service Provider.                      Question 8 indicated that the Reliability Coordinator may not have all the information to 'see' all the SOLs.</p>			
TVA	x		See comment in # 8,
<p><b>Response:</b> Please see the response to your comment under question #8.</p>			
IRC Standards Review Committee	x		
PSC of SC	x		
Peppo Holdings, Inc.	x		
IESO	x		



**Consideration of Comments on Draft 7 of the IROL Standards**

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<b>Question #9</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
NPC CP9	x		
ISO-NE	x		
Hydro-Québec TransÉnergie	x		

10. The Drafting Team is recommending that when IRO-008-1 is approved, conforming changes be made to the following standard:  
 IRO-004-1 — RC – Operations Planning; Retire R1 and R2

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

**Summary Consideration:** Most commenters agreed with the drafting team’s proposed retirement of IRO-004-1 R1 and R2.

Question #10			
Commenter	Yes	No	Comment
Southern Co		x	Southern Co. believes the RC should conduct contingency analysis studies that would identify SOLs and IROLs. We recommend keeping both R1 and R2.
<p><b>Response:</b> The drafting team used different words to address the same requirement. The drafting team believes the proposed IRO-008-1 R1 is a better requirement because it specifically requires the Reliability Coordinator to look at its ‘Wide Area’ rather than its ‘Reliability Coordinator Area’ in conducting its Operational Planning Analyses.</p> <p>The drafting team recommended retiring IRO-004-1 R2 because it has been identified as ‘unmeasurable’ by the Missing Measures drafting team, and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008, IRO-009, and IRO-010 become effective.</p>			
ATC		x	If Reliability Coordinators only have to monitor IROLs then they will have no ability to identify a SOL that becomes an IROL is real-time. It is the responsibility of the Reliability Coordinators to provide oversight of the bulk power system, therefore insuring reliable operations.
<p><b>Response:</b> The proposed standards and implementation plan limit the Reliability Coordinator’s requirements for monitoring to those parameters associated with facilities that have been identified as potentially having IROLs.</p>			
Manitoba Hydro		x	General agreement with the approach, however, the new definition, Operational Planning Analysis, is a very high level definition such that R1 in IRO-008 may be very difficult to measure.
<p><b>Response:</b> The drafting team believes that the proposed standard’s R1 is better than the requirement it is replacing. The proposed R1 requires the Reliability Coordinator to look at a wider system and doesn’t mislead the responsible entity into thinking that the list of examples provided in the original standard’s R1 (including overloaded transmission lines and transformers, voltage and stability limits, etc.) is all-inclusive.</p>			
TVA		x	IRO-004-1 R2 should be included in the Technical Reference. The Technical Reference document should be provide (for information purposes) as part of the document package for this review of proposed requirement changes.
<p><b>Response:</b> The drafting team recommended retiring IRO-004-1 R2 because it has been identified as ‘unmeasurable’ by the Missing Measures drafting team, and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008, IRO-</p>			

Consideration of Comments on Draft 7 of the IROL Standards

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Question #10			
Commenter	Yes	No	Comment
009, and IRO-010 become effective.			
IRC Standards Review Committee	X		
Entergy	X		
PSC of SC	X		
Pepeco Holdings, Inc.	X		
IESO	X		
First Energy Corp	X		
NPCC CP9	X		
ISO-NE	X		
Hydro-Québec TransÉnergie	X		
MISO SSC	X		
MRO	X		

11. The Drafting Team is recommending that when IRO-009-1 is approved, conforming changes be made to the following standards:

EOP-001-0 — Emergency Operations Planning; Retire R2

IRO-004-1 — RC – Operations Planning; Retire R3 and R6

IRO-005-2 — RC – Current Day Operations; Retire R3, R5, R9; Delete R13 part 1; Modify R14; Retire R16, R17

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

**Summary Consideration:** While several commenters did indicate support for the proposed retirements and revisions, other commenters identified concerns with the proposed changes. Several commenters were concerned that a requirement that forced the Reliability Coordinator to ‘coordinate’ its plans for preventing and mitigating instances of exceeding IROLs was not included in the proposed set of IROL standards. In some cases, the Reliability Coordinator doesn’t have time to ‘coordinate’ with all the entities that may need to take action as part of a plan to prevent or mitigate an instance of exceeding an IROL. The Reliability Coordinator ‘may’ coordinate with the entities that are expected to take action but this coordination is not a requirement. The Reliability Coordinator has ultimate responsibility for having these processes, procedures and plans – not the Balancing Authority or Transmission Operator. Other commenters indicated that they thought the requirement to coordinate outages had been removed, but this is not among the proposed changes.

Some commenters indicated that because the requirements for the Reliability Coordinator to monitor all SOLs have been proposed for retirement, the Reliability Coordinator will not have access to SOLs. Under FAC-014, the Reliability Coordinator does have SOLs and does distribute them to the TSP as well as to other entities. The proposed standards clarify that the primary responsibility for taking action to resolve SOLs rests with the Transmission Operator. If the Transmission Operator needs assistance, the Transmission Operator can ask for assistance when it informs the Reliability Coordinator that it has exceeded an SOL or IROL.

The drafting team is hopeful that the explanations provided will improve consensus on this issue.

Question #11			
Commenter	Yes	No	Comment
Entergy		x	1. IRO-009-1 R1 requires the RC to develop one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs. IRO-004-1 R3 (to be deleted) requires the RC to develop action plans –  IN CONJUNCTION WITH ITS TRANSMISSION OPERATORS AND BALANCING AUTHORITIES - (IRO-004-1 R3: Each Reliability Coordinator shall, in conjunction with its

Question #11			
Commenter	Yes	No	Comment
			<p>Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.)</p> <p>2. IRO-005-2 R16 (to be retired) requires the RC to discuss options to mitigate IROLs which also is not include in these revised draft standards.</p> <p>The reasoning given in the Implementation Plan for not requiring the RC to develop - in conjunction - the Operating Process, Procedures or Plans with TOPs and BAs is that - under some conditions the Reliability Coordinator may not have time to 'coordinate' the development of these plans with all of its Transmission Operators and Balancing Authorities -. We suggest the RC be required to coordinate the development of all Operating Process, Procedures or Plans with TOPs and BAs. Only in the rarest of instances when a sudden system change requires the RC to develop a new Operating Process, Procedure or Plan in real-time may RCs be exempt from developing these Operating Process, Procedures or Plans in conjunction with TOPs and BAs.</p> <p>3. In addition, there are several requirements on TOPs and BAs (for example see TOP-002-2, TOP-004-1 R1, TOP-008-1 R1 and R2) for them to plan and operate to meet all IROLs. The TOPs and BAs must be informed of the IROLs in order to plan and operate around them.</p> <p>4. RCs should continue to develop processes, procedures or plans in conjunction with TOPs and BAs as required in the existing IRO-004 R3, and discuss options to mitigate IROLs as required in IRO-005-2 R16. The requirement to develop in - conjunction with - should be put into IRO-009-1 R1.</p> <p>Therefore we suggest IRO-009-1 R1 be changed from - ... PLANS THAT .. - to - ... PLANS DEVELOPED IN CONJUNCTION WITH TRANSMISSION OPERATORS AND BALANCING AUTHORITIES THAT ... - .</p> <p>IRO-009-1 R2 requires the RC to develop one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to mitigate the magnitude and duration of exceeding all IROLs. The discussion above for IRO-009-1 R1 applies here. Therefore we suggest IRO-009-1 R2 be changed from - ... PLANS THAT .. - to - ... PLANS DEVELOPED IN CONJUNCTION WITH TRANSMISSION</p>

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #11</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			<p>OPERATORS AND BALANCING AUTHORITIES THAT ... - .</p> <p>5. IRO-005-2 R5 (to be deleted) requires the RC to identify the cause of any potential or actual IROL violations. That requirement is not in these new IROs. We suggest that requirement be added back in to IRO-009-1 R3 (addressing an assessment of actual or expected system conditions) by changing - .. shall implement one or more .. - to - .. shall IDENTIFY THE CAUSE OF ANY POTENTIAL OR ACTUAL IROL VIOLATIONS and shall implement one or more ...</p> <p>6. IRO-005-2 R5 (to be deleted) requires the RC to identify the cause of any potential or actual IROL violations. That requirement is not in these new IROs. We suggest that requirement be added back in to IRO-009-1 R4 (addressing actual system conditions) by changing - .. shall, without delay, act or direct others .. - to - .. shall, without delay, IDENTIFY THE CAUSE OF EXCEEDING AN IROL, AND SHALL act or direct others ...</p>
<p><b>Response:</b></p> <p>1. 2. In some cases, the Reliability Coordinator doesn't have time to 'coordinate' with all the entities that may need to take action as part of a plan to prevent or mitigate an instance of exceeding an IROL. The Reliability Coordinator 'may' coordinate with the entities that are expected to take action but this coordination is not a requirement.</p> <p>3. Note that FAC-014 requires the Reliability Coordinator to distribute SOLs and IROLs to the Transmission Operators. The distribution of SOLs and IROLs is not included in the proposed set of standards.</p> <p>4. As noted above in response to the first two comments, the Reliability Coordinator may not have time to coordinate this activity.</p> <p>5. There are other standards that require event analysis.</p> <p>6. The proposed addition is not practical as sometimes it takes a great deal of analysis to identify the cause of exceeding an IROL.</p>			
Southern Co		x	<p>The RC has no knowledge of SOLs based on the SDT's recommended changes. So how will the RC coordinate SOL violations as the (new) R6 states in IRO-005-3?</p> <p>The new R11 in IRO-005-3 states the RC shall make known to the TSP all SOLs and IROLs in its area. How does the RC do this when they are NOT expected to study or monitor SOLs?</p> <p>We do agree that EOP-001-0, R2 should be retired.</p>

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #11</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			<p>Recommend keeping R3 and R6 of IRO-004-1. The RC should develop action plans to return transmission loading to within acceptable SOL or IROLs.</p> <p>Southern also recommends keeping R3, R5, R9, R13, R14, R16, and R17 of IRO-005-2.</p>
<p><b>Response:</b> Under FAC-014, the Reliability Coordinator does have SOLs and does distribute them to the TSP as well as to other entities. The proposed standards clarify that the primary responsibility for taking action to resolve SOLs rests with the Transmission Operator. If the Transmission Operator needs assistance, the Transmission Operator can ask for assistance when it informs the Reliability Coordinator that it has exceeded an SOL or IROL. The responsibility for resolving SOLs is assigned to the Transmission Operator.</p> <p>TOP-002-2 R1 does require the Transmission Operator to maintain a set of current plans designed to evaluate options and set procedures for reliable operation through a reasonable future time period.</p> <p>TOP-004-1 R6 requires: the Transmission Operator to have and implement formal policies and procedures to provide for transmission reliability including having plans to respond to IROL and SOL violations.</p> <p>TOP-002 R10 requires: Each Balancing Authority and Transmission Operator shall plan to meet all System Operating Limits (SOLs) and Interconnection Reliability Operating Limits (IROLs).</p> <p>IRO-009-1 R1 and R2 require the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – In some cases, the Reliability Coordinator doesn't have time to 'coordinate' with all the entities that may need to take action as part of a plan to prevent or mitigate an instance of exceeding an IROL. The Reliability Coordinator 'may' coordinate with the entities that are expected to take action but this coordination is not a requirement. The Reliability Coordinator has ultimate responsibility for having these processes, procedures and plans – not the Balancing Authority or Transmission Operator.</p> <p>IRO-009-1 R2 includes language that is more explicit than the language in IRO-004-1 R6: 'results of these studies' is not as specific as 'when an assessment of actual or expected system conditions'.</p> <p>The implementation plan identifies the reasoning for recommending the retirements in IRO-005-2. There is no supporting justification to indicate that these recommendations are not correct, and without significant comments from other stakeholders indicating that these requirements should be retained.</p>			
<p>IESO NPCC CP9 ISO-NE Hydro-Québec TransÉnergie</p>		x	<p>EOP-001 R2 requires that a TOP have an emergency load reduction plan for all identified IROLs. The intent of this requirement is for the TOP to be ready to implement load reduction as directed by the RC to mitigate IROL violations when other control actions have been implemented or are being implemented in parallel. Unless this requirement is covered elsewhere, it needs to be retained to assure a TOP's readiness, which is in a different context than what the requirements in IRO-009 imply. Note that the RC does</p>

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #11</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			not own or operate any load reduction scheme. It must rely on the operators of these schemes - the TOP (and DP, as directed by the TOP), to implement load reduction.
<p><b>Response:</b> Under IRO-009-1 R2, the Reliability Coordinator is required to have plans to prevent or mitigate IROLs. The Reliability Coordinator's plan is expected to include actions assigned to other entities, including the Transmission Operator. Note that EOP-001-0 R3 does require each Transmission Operator to develop, maintain, and implement a set of plans for load shedding.</p> <p>TOP-008 R1 requires the Transmission Operator to take steps to relieve various operating conditions, including shedding firm load. In preparation for TOP-008 R1, the Transmission Operator is expected to have a load shedding plan ready to execute.</p>			
IESO		x	<p>1. We agree with retiring R6 of IRO-004-1, but suggest that a part of R3 in IRO-004-1 which requires that the RC develop the action plans in conjunction with the TOPs be reflected in this standard. This should be a requirement, not just an understanding, and hence needs to be stated explicitly herein.</p> <p>2. We agree that R3, R5 and R9 of IRO-005-2 can be retired. However, the key requirement in R3 and R5 for the RC to correct an IROL violation as soon as possible and within 30 minutes needs to be retained somewhere, preferably in this standard. Not having a time limit to correct IROL violations can result in an IROL being exceeded for an indefinite period of time, subjecting the system to prolonged risks of instability and cascade tripping. The 30 minute also serves as the threshold for curtailing firm load to correct the violation immediately if an IROL violation cannot be corrected by adjusting generation and interchange, reconfiguration, reducing interruptible load, voltage reduction, etc. within that time frame.</p> <p>3. Similar to our comment on IRO-004-1, that part in R9 of IRO-005-2 which requires the RC to coordinate transmission and generation outages needs to be stipulated somewhere, perhaps in the context of the RC approving outages. Hence, retiring R9 should be condition on halaving this coordination/approval requirement covered by this (IRO-009) or another standard.</p> <p>We agree that part 1 of R13, and R16 and R17 of IRO-005-2 can be deleted.</p>
<p><b>Response:</b></p> <p>1. In some cases, the Reliability Coordinator doesn't have time to 'coordinate' with all the entities that may need to take action as part of a plan to prevent or mitigate an instance of exceeding an IROL. The Reliability Coordinator 'may' coordinate with the entities that are expected to take action but this coordination is not a requirement. The Reliability Coordinator has</p>			



Consideration of Comments on Draft 7 of the IROL Standards

Question #11			
Commenter	Yes	No	Comment
<p>ultimate responsibility for having these processes, procedures and plans – not the Balancing Authority or Transmission Operator.</p> <p>2. The definition of IROL Tv has been approved by the NERC BOT: The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's Tv shall be less than or equal to 30 minutes. The standard does require that the IROL be relieved within the IROL's Tv.)</p> <p>3. The only change to IRO-005-2 R9 was to remove the reference to IROLs.</p>			
<p>NPCC CP9 ISO-NE Hydro-Québec TransÉnergie</p>		x	<p>1. NPCC participating members agree with retiring R6 of IRO-004-1, but suggest that a part of R3 in IRO-004-1 which requires that the RC develop action plans in conjunction with the TOPs, be reflected in this standard.</p> <p>2. NPCC participating members believe the key requirement in R3 and R5 is for the RC to correct an IROL violation as soon as possible and within 30 minutes. This needs to be retained somewhere, preferably in this standard. Not having a time limit to correct IROL violation can result in an IROL being exceeded for an indefinite period of time, subjecting the system to prolonged risks of instability and potential cascade tripping. The 30 minutes also serves as the threshold that if an IROL violation cannot be corrected by adjusting generation and interchange, reconfiguration, reducing interruptible load, voltage reduction, etc. within that time frame, curtailment of firm load must also be implemented to correct the violation immediately.</p> <p>3. NPCC participating members believe the concept of the RC approving outages needs to be retained somewhere in the standards, retiring R9 should be conditional on having this coordination/approval requirement covered by this (IRO-009) or another standard.</p>
<p><b>Response:</b> 1. In some cases, the Reliability Coordinator doesn't have time to 'coordinate' with all the entities that may need to take action as part of a plan to prevent or mitigate an instance of exceeding an IROL. The Reliability Coordinator 'may' coordinate with the entities that are expected to take action but this coordination is not a requirement. The Reliability Coordinator has ultimate responsibility for having these processes, procedures and plans – not the Balancing Authority or Transmission Operator.</p> <p>2. The definition of IROL Tv has been approved by the NERC BOT: The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's Tv shall be less than or equal to 30 minutes. The standard</p>			

Question #11			
Commenter	Yes	No	Comment
does require that the IROL be relieved within the IROL's T <sub>v</sub> .)			
3. The only change to IRO-005-2 R9 was to remove the reference to IROLs.			
ATC		x	ATC does not believe that a Reliability Coordinator will be able to identify an SOL that becomes an IROL in real-time if they are not required to monitor SOLs. Additionally ATC does not see the connection between IRO-009 and these three existing standards. IRO-009 is not replacing these requirements therefore they should not be changed.
<p><b>Response:</b> The implementation plan provided an explanation for retiring or revising each of these requirements.</p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.                             <ul style="list-style-type: none"> <li>- The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's T<sub>v</sub>, which can be shorter than 30 minutes.</li> </ul> </li> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.                             <ul style="list-style-type: none"> <li>- IRO-009-1 R1 requires the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – under some conditions, the Reliability Coordinator may not have time to 'coordinate' the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>- IRO-009-1 R2 includes language that is more explicit than the language in IRO-004-1 R6: 'results of these studies' is not as specific as 'when an assessment of actual or expected system conditions'.</li> </ul> </li> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R3, and R5 should be retired.                             <ul style="list-style-type: none"> <li>- IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a T<sub>v</sub> that is much shorter than 30 minutes. IRO-005 R5 can lead the Compliance Monitor to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.</li> <li>- IRO-005 R9 is recommended to be modified (remove reference to IROLs) when IRO-009-1 becomes effective because: IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul> </li> <li>▪ When IRO-007-1 and IRO-009-1 become effective, IRO-005-2 R13 should be retired.                             <ul style="list-style-type: none"> <li>- IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.</li> </ul> </li> </ul>			

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Question #11			
Commenter	Yes	No	Comment
			<ul style="list-style-type: none"> <li>- The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-007-1 R2 has a similar requirement that is applicable totally to the Reliability Coordinator.</li> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.               <ul style="list-style-type: none"> <li>- IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROLs – R14 implies that the Transmission Service Provider may respect 'either' SOLs or IROLs.</li> <li>- IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>- IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a T<sub>v</sub> that is much shorter than 30 minutes.</li> </ul> </li> </ul>
Manitoba Hydro		x	MH does not agree with the removal of required coordination between the RC and the Transmission Operator and Balancing Authority. This approach is moving in a direction to undermine reliability.
<p><b>Response:</b> In some cases, the Reliability Coordinator doesn't have time to 'coordinate' with all the entities that may need to take action as part of a plan to prevent or mitigate an instance of exceeding an IROL. The Reliability Coordinator 'may' coordinate with the entities that are expected to take action but this coordination is not a requirement. The Reliability Coordinator has ultimate responsibility for having these processes, procedures and plans – not the Balancing Authority or Transmission Operator.</p>			
TVA		x	The modification of IRO-005-2 R14 to retire part 1, as stated on page 14 (in the Notes section) is not reflected in the redlined version of IRO-005-3. This change should be made in the redlined version.
<p><b>Response:</b> Corrected. Good Catch!</p>			
First Energy Corp	x		IRO-005-2 Requirement 9 does not appear to be marked for deletion as proposed above in the files provided with this posting.
<p><b>Response:</b> Corrected. Good Catch!</p>			
IRC Standards Review Committee	x	x	<p>We agree that R3, R5 and R9 of IRO-005-2 can be retired. Note that R2 in IRO-009-1 stipulates that "...such that the IROL is relieved within the IROL's T<sub>v</sub>." For consistency, we suggest that "within the IROL's T<sub>v</sub>" be inserted in R4 to reiterate the time limit requirement of an IROL.</p> <p>We agree that part 1 of R13, and R16 and R17 of IRO-005-2 can be deleted.</p>
<p><b>Response:</b> IRO-009-1 R4 was modified as suggested.</p>			
Pepco Holdings, Inc.	x		

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<b>Question #11</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
MISO SSC	x		
PSC of SC	x		
MRO	x		

12. The Drafting Team is recommending that when IRO-010-1 is approved, conforming changes be made to the following standards:

IRO-002-1 — RC – Facilities; Retire R2

IRO-004-1 — RC – Operations Planning; Retire R4, R5

IRO-005-2 — RC – Current Day Operations; Retire R2

TOP-003-0 — Planned Outage Coordination; Modify R1.2

TOP-005-1 — Operational Reliability Information; Retire R1, R1.1; Convert Attachment A to a Reference

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control; Modify R4

Do you agree with these proposed conforming changes? If not, please identify any conforming change you feel is incorrect.

**Summary Consideration:** While several commenters did indicate support for the proposed changes, several other commenters listed a variety of reasons for disagreement with the proposed changes. The most frequently cited reason for disagreeing with the proposed changes was a concern that data wouldn't be provided to the Reliability Coordinator in time to meet the Reliability Coordinator's needs. The proposed standards do include requirements for entities to provide data to their Reliability Coordinator. Each Reliability Coordinator can add as much specificity to its data specification requirements as it needs to support reliability – and the new requirement indicates that the Reliability Coordinator's data specification must include the timing and periodicity as well as other criteria (IRO-010-1 R1) related to the submittal of that data.

The drafting team is hopeful that the explanations provided will improve consensus on this issue.

Question #12			
Commenter	Yes	No	Comment
MRO	x		The MRO reviewed the implementation plan and it is clear that IRO-010-1 gives the flexibility to specify the data requirements in R1 and the requirement that the functional entities follow them in R3.
ATC		x	Please see our comments to question 8.
<a href="#">Response: Please see our response to your comments on question 8.</a>			
Entergy		x	IRO-010-1 R3 contains the requirement that the RC provide data and information to other RCs. However, IRO-015-1 R3 already contains that requirement: IRO-015-1 R3. The Reliability Coordinator shall provide reliability-related information as requested by other Reliability Coordinators.  Therefore either the Reliability Coordinator should be deleted from the list of entities specified in IRO-010-1 R3, or, IRO-015 -1 R3 should be deleted from that standard.

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Question #12			
Commenter	Yes	No	Comment
<p><b>Response:</b> The requirement in IRO-010 is for entities within the Reliability Coordinator Area to provide data to the Reliability Coordinator and the requirement in IRO-015 is for exchange of data between Reliability Coordinators.</p>			
Southern Co		x	<p>While we agree with the SDT's recommendations on TOP-003-0 and TOP-005-1, we disagree with the remainder of the retirement recommendations and suggest keeping the requirements as they are.</p> <p>It is ironic that while the SDT is recommending the removal of requirements which specifically state that the TO, GO, GOP and LSE are to provide the RC with information required for system studies by 1200 noon each day, the Blackout Report stated a concern about the NERC standards' lack of requirements for providing reliability information to the RC.</p> <p>In particular, under the heading of "Data Exchanged for Operational Reliability" in the Blackout Final Report, the Report states that "a variety of up-to-date information on the elements of the system must be collected and exchanged for modeled topology to be accurate in real time."</p> <p>The Report states "there is no current requirement for how quickly asset owners must report changes in element status (such as a line outage) to the SDX. NERC is now developing a requirement for regular information update submittals that is scheduled to take effect in the summer of 2004." [Reference Page 51 of the Report]</p> <p>We are approaching the third anniversary of the publishing of this Report and still have no requirement in any NERC Standard for submitting data to the NERC System Data Exchange.</p>
<p><b>Response:</b> The proposed standards do include requirements for entities to provide data to their Reliability Coordinator. Each Reliability Coordinator can add as much specificity to its data specification requirements as it needs to support reliability – and note that the new requirement adds timing and periodicity as well as other criteria (IRO-010-1 R1) Note that under the implementation plan, there will never be a time when there isn't a requirement in effect for entities to provide data to the Reliability Coordinator.</p>			
TVA		x	<p>Agree to retire IRO-005-2 R2, however redlined version of IRO-005-3 does not show deletion of the entire R2 (which become R1 in IRO-005-3.)</p>
<p><b>Response:</b> This typographical error has been corrected so that the revised document shows R2 as being totally retired.</p>			
IRC Standards Review Committee Pepeco Holdings, Inc.		x	<p>(i) We agree with retiring R2 of IRO-002-1. (ii) We do not agree with removing R1.2 from TOP-003-1. Providing transmission outage information to the RC is essential for ensuring the RC is aware of system changes that</p>

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #12</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
NPCC CP9 ISO-NE Hydro-Québec TransÉnergie IESO			may affect interconnected system reliability. There should not be any prejudgment as to which outage has an impact on SOL only. (iii) We agree with the proposed deletions/changes to IRO-005-2, TOP-005-1 and TOP-006-1.
<b>Response:</b> TOP-003-1 R1.2 was not removed, it was revised to eliminate the obligation to submit data to the Reliability Coordinator because IRO-010 requires entities to provide data to the Reliability Coordinator, and as envisioned, this would include outage schedules and other outage information.			
IESO		x	We agree with retiring R4 and R5 of IRO-004-1. However, the time frame for the RC to complete day-ahead assessment as stipulated in R5 should be retained somewhere as otherwise, there could be mis-coordination, delays and even failure to complete the assessment in time for other operating entities to prepare the system for next day operations.
<b>Response:</b> The proposed standards do include requirements for entities to provide data to their Reliability Coordinator. Each Reliability Coordinator can add as much specificity to its data specification requirements as it needs to support reliability – and note that the new requirement adds timing and periodicity as well as other criteria (IRO-010-1 R1)			
MISO SSC		x	Transmission operators will not have to communicate outage information to the RC with these changes. The requirement to communicate the outage to the RC should not be removed from the transmission operator.
<b>Response:</b> TOP-003-1 R1.2 was not removed, it was revised to eliminate the obligation to submit data to the Reliability Coordinator because IRO-010 requires entities to provide data to the Reliability Coordinator, and as envisioned, this would include outage schedules and other outage information.			
First Energy Corp	x		
PSC of SC	x		
Manitoba Hydro	x		

13. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement please identify the conflict here. Similarly, if you believe that any requirement in this set of standards has an unnecessary adverse impact on energy markets, please identify the requirement and its adverse impact here.

**Summary Consideration:** No conflicts were identified.

Question #13			
Commenter	No	Yes	Comment
MRO	x		
IRC Standards Review Committee	x		
Entergy	x		
Southern Co	x		
Manitoba Hydro	x		
PSC of SC	x		
TVA	x		
Pepco Holdings, Inc.	x		
IESO	x		
First Energy Corp	x		
NPCC CP9	x		
ISO-NE	x		
Hydro-Québec TransÉnergie	x		
ATC	x		



14. The drafting team is recommending that these standards be balloted with four separate ballots, according to the following table. There would be a single ballot for IRO-007-1 that would include approval of IRO-007-1 and approval of the retirement of IRO-002-1 R6, and approval of retirement of IRO-003-2 R1 and R2, etc.

**Summary Consideration:** Most commenters supported having four ballots for the standards.

Question #14			
Commenter	Yes	No	Comment
ATC		x	These four standards should be voted on in a single ballot. The nature of this set of standards and the proposed modification to existing standards are such that a failure of one would cause a major disconnection in NERC standards. For this reason ATC strongly requests that the four standards be balloted as one.
<p><b>Response:</b> Most commenters supported the subdivision as proposed. Each of the subdivisions is a 'stand alone' set that could be implemented without the need to have approval of the other ballots.</p>			
Southern Co		x	By balloting these standards in 4 separate ballots, certain problems arise. For example, Ballot 4 (IRO-010) says to retire R2 of IRO-002-1. Ballot 1 (IRO-007) says to retire R6 of IRO-002-1.  IF one ballot fails and the other passes, Standard IRO-002-1 cannot be approved by the Board because one requirement passed the ballot voting while the other requirement did not.
<p><b>Response:</b> If one ballot is approved and others aren't, then only the requirements identified in the approved ballot would be changed. For example – if Ballot 4 (IRO-010) is approved and Ballot 1 is not, then IRO-002-2 would include only the approved change to R2 it would not include a change to R6, which would remain in effect.</p>			
Manitoba Hydro	x		
Entergy	x		
PSC of SC	x		
TVA	x		
IRC Standards Review Committee	x		
Pepco Holdings, Inc.	x		
IESO	x		
First Energy Corp	x		
NPCC CP9	x		

**Consideration of Comments on Draft 7 of the IROL Standards**

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<b>Question #14</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
ISO-NE	X		
Hydro-Québec TransÉnergie	X		
MISO SSC	X		
MRO	X		

15. If you have any other comments on this set of standards or its implementation plan that you have not already submitted above, please provide them here.

Question #15	
Commenter	Comment
MRO	<p>The MRO requests clarification as to why the following two definitions were added in IRO-009-1 and never used: Interconnection Reliability Operating Limit Event, and Interconnection Reliability Operating Limit Event Duration. If terms are specifically added to a standard, it is expected that the terms will be used in the standard. If the new terms are not to be used in the standard where they are originally defined, it would appear that the new terms are not needed and should be struck from the standard until a such time that they are to be used.</p> <p>The MRO requests the definition of the term Delay, as it is used in in IRO-009-1-R4. Is the RC considered in violation if it does not act with in one minute? If it does not act with in two-minutes. Leaving this term undefined will result in arbitrary enforcement of this standard</p>
<p><b>Response:</b> These definitions were used in earlier versions of the standard but aren't needed and have been deleted.</p> <p>The drafting team has been advised not to define terms that use the common 'Webster' dictionary definition. Webster says delay means 'to postpone until a later time, to defer, to procrastinate, tarry or linger.</p>	
Entergy	<p>1. The industry has determined that NERC reliability standards need to be more definitive as to which entities the standards are Applicable. Therefore, Entergy strongly suggests that all Applicability assignments in ALL standards and requirements be changed to be very specific. Therefore, we suggest the Applicability of each standard be changed to - ALL REGISTERED xxx, NO ADDITIONAL CONDITIONS NOR LIMITATIONS WILL BE ADDED TO THE APPLICABILITY OF THIS STANDARD, where xxx is the functional entity to whom the standard applies. Therefore, the Applicability of IRO-007-1 should not be Reliability Coordinator but should be changed to - ALL REGISTERED RELIABILITY COORDINATORS, NO ADDITIONAL CONDITIONS NOR LIMITATIONS WILL BE ADDED TO THE APPLICABILITY OF THIS STANDARD. The Applicability of all other standards should be configured in a similar manner for all entities to whom that particular standard applies.</p> <p>2. Version 6 of IRO-009 contained the requirement:</p> <p style="padding-left: 40px;">R1.4. The reliability coordinator shall document each instance of exceeding an IROL and shall document and complete an IROL violation report for each instance of exceeding an IROL for time greater than that limit's Tv. The reliability coordinator shall file each IROL violation report with its compliance monitor within five business days of the initiation of the event.</p>

**Consideration of Comments on Draft 7 of the IROL Standards**

<b>Question #15</b>	
<b>Commenter</b>	<b>Comment</b>
	<p>3. This requirement that a RC must document exceeding an IROL and report each IROL violation has not been included in the current draft, V7, of any of these drafts IRO-007 - 010 and does not seem to be required in any other NERC standards. We suggest it be included in IRO-009-1 as R5 along with appropriate Measures, Compliance requirements, VSL, VRF, and MTH.</p>
<p><b>Response:</b></p> <p>1. Regarding Applicability- drafting teams were given the following guidance – if the standard will be applicable to all who register to perform a specific function, then there is no need to add more words to the applicability section – in other words, the ‘default’ is ‘all registered Balancing Authorities.’ The applicability section will only include additional clarification when the applicability is ‘other than all’.</p> <p>2. As written, the Reliability Coordinator provides a data specification to any entity from which it needs reliability-related data.</p> <p>3. The drafting team eliminated these reporting requirements as sanctionable requirements but retained the form and the submission of the form as a tool to use for self-reporting by exception. The act of reporting is not critical to reliability. In addition, the ERO’s Sanctions Guidelines penalize entities that don’t report violations so there is no incentive to ‘not report’ when there is an IROL violation.</p>	
Manitoba Hydro	<p>MH appreciates the effort the drafting team put into the development of these standards and that the material has been organized to facilitate review and comment.</p> <p>MH also endorses the MRO comments: The MRO requests clarification as to why the following two definitions were added in IRO-009-1 and never used: Interconnection Reliability Operating Limit Event, and Interconnection Reliability Operating Limit Event Duration. If terms are specifically added to a standard, it is expected that the terms will be used in the standard. If the new terms are not to be used in the standard where they are originally defined, it would appear that the new terms are not needed and should be struck from the standard until a such time that they are to be used.</p> <p>The MRO requests the definition of the term Delay, as it is used in in IRO-009-1-R4. Is the RC considered in violation if it does not act with in one minute? If it does not act with in two-minutes. Leaving this term undefined will result in arbitrary enforcement of this standard</p>
<p><b>Response:</b> These definitions were used in earlier versions of the standard but aren’t needed and have been deleted.</p> <p>The drafting team has been advised not to define terms that use the common ‘Webster’ dictionary definition. Webster says delay means ‘to postpone until a later time, to defer, to procrastinate, tarry or linger.</p>	
MISO SSC	<p>1. IRO-007-1 - Tv is a term that is not defined. Measures do not specify if temporary loss of ICCP or telemetry is an exception or if it is still considered a violation. It should not be considered a violation.</p>

Question #15	
Commenter	Comment
	<p>2. IRO-008-1 - R2 requires that Real-Time Assessments be performed at least every 30 minutes. The definition of Real-Time Assessment leaves open how far into the future the assessments must cover. R3 requires sharing of results to prevent or mitigate exceeding an IROL. It seems like this should require an RC directive to correct the situation. Violation severities do not address temporary loss of ICCP, telemetry or state estimation. They should not be violations.</p> <p>3. IRO-009-1 - Two new terms are defined for inclusion in the glossary: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in the standard.</p> <p>4. Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. Delay is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay. Additionally, we wonder how will the ERO track a given percent of "IROLs identified in advance of real-time" against the number of operating procedures?</p> <p>5. IRO-010-1 - Does R3 create the requirement for a entity to add metering if it does not already exist at a location, if a measurement is requested? This needs to be made clear. Data anomalies such as those caused by a bad RTU are not addressed and need to be made exceptions in the violations severity section.</p> <p>6. While we agree with the concept of consolidating the IROL-related standards, there is more work to do. Requirements regarding IROLs can be boiled down to:</p> <ol style="list-style-type: none"> <li>1. Have IROLs pre-defined (preparedness).</li> <li>2. Train and prepare for IROLs (preparedness).</li> <li>3. Update limits based on conditions (performance).</li> <li>4. Monitor for and respond quickly to IROLs and correct them within 30 minutes (performance).</li> <li>5. Communicate reaching IROLs to others (performance).</li> <li>6. Report violations of the IROL standard (administrative).</li> </ol> <p>The acronym IROL shows up 168 times in the present standards. The vast majority of these are restatements of the 6 core requirements in different standards or explanatory information that should</p>

Question #15	
Commenter	Comment
	not be assigned risk factors or measures.
	<p><b>Response:</b></p> <ol style="list-style-type: none"> <li>1. The term, IROL T<sub>v</sub> was defined by the Determine Facility Ratings SDT and was approved with FAC-010.</li> <li>2. There are justifiable reasons for different Reliability Coordinators to use different time periods when looking into the future. The requirement to direct entities to take actions is addressed in IRO-009-1. Loss of telemetry is not addressed within this standard. The ERO Sanctions Guidelines allow the Compliance Monitor to consider mitigating factors when assessing compliance.</li> <li>3. These definitions were used in earlier versions of the standard but aren't needed and have been deleted.</li> <li>4. The violation severity levels were revised to eliminate use of percentages. Note that the drafting team was advised to avoid defining terms such as 'delay' that have the same definition as that found in a Webster Dictionary.</li> <li>5. There is nothing in the proposed standard that requires an entity to install equipment. There are existing standards that require entities to provide data to the Reliability Coordinator, so entities should already be providing data to the Reliability Coordinator.</li> <li>6. The drafting team attempted to consolidate requirements that were within the scope of our SAR. If anyone desires to undertake an effort to further consolidate the requirements related to IROLs, anyone can submit a new SAR.</li> </ol>
IRC Standards Review Committee Pepco Holdings, Inc.	<ol style="list-style-type: none"> <li>1. The requirement to monitor, or at least be aware of the impacts on, critical parameters in other RC's areas, as proposed for IRO-007 (M2.1) and IRO-008 (R1) in the previous draft set of standards posted on March 1, 2004, is missing. This monitoring capability is essential for identifying potential reliability impact on other RC areas due to operation plans and real-time operations in one RC area. Note that IRO-010 has this requirement (implicit in R3).</li> <li>2. R2 of IRO-008 requires that Real-Time Assessments be performed at least every 30 minutes. The definition of Real-Time Assessment leaves open how far into the future the assessments must cover.</li> <li>3. R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct" be inserted after "...the Reliability Coordinator shall share its results with" in R3.</li> <li>4. Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is</li> </ol>

Question #15	
Commenter	Comment
	<p>the reason for having these terms defined?</p> <p>5. In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay.</p> <p>6. In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document and complete an IROL violation report for each instance of exceeding an IROL for time greater than that limit's Tv. This requirement is missing in the new version. We feel that this requirement should be stated in this standard.</p> <p>7. We do not have any comments on the proposed measures. However, from a process viewpoint, none of the questions asked in this comment form seek concurrence or comments on any of the measures proposed. Since these measures did not exist in any of the current standards, and have been revised since the last draft versions (posted on March 1, 2004), the industry needs to have an opportunity to offer its view.</p>
<p><b>Response:</b></p> <p>1. IRO-007 does require the Reliability Coordinator to monitor its 'Wide Area' which is an approved, defined term – the definition of Wide Area is: The entire Reliability Coordinator Area as well as the critical flow and status information from adjacent Reliability Coordinator Areas as determined by detailed system studies to allow the calculation of Interconnected Reliability Operating Limits.</p> <p>2. There are justifiable reasons for different Reliability Coordinators to use different time periods when looking into the future. The requirement to direct entities to take actions is addressed in IRO-009-1. Loss of telemetry is not addressed within this standard. The ERO Sanctions Guidelines allow the Compliance Monitor to consider mitigating factors when assessing compliance.</p> <p>3. IRO-009-1 includes the Reliability Coordinator's directives.</p> <p>4. These definitions were used in earlier versions of the standard but aren't needed and have been deleted.</p> <p>5. The violation severity levels were revised to eliminate use of percentages. Note that the drafting team was advised to avoid defining terms such as 'delay' that have the same definition as that found in a Webster Dictionary.</p>	

Question #15	
Commenter	Comment
	<p>6. The drafting team eliminated these reporting requirements because they aren't needed to support reliability. The drafting team expects that any violation of an IROL will have an associated event investigation.</p> <p>7. This 'open-ended' question was intended to collect all comments that weren't provided elsewhere. If anyone has a comment on measures this was the place to provide them.</p>
IESO	<p>1. The requirement to monitor, or at least be aware of the impacts on, critical parameters in other RC's areas, as proposed for IRO-007 (M2.1) and IRO-008 (R1) in the previous draft set of standards posted on March 1, 2004, is missing. This monitoring capability is essential for identifying potential reliability impact on other RC areas due to operation plans and real-time operations in one RC area. Note that IRO-010 has this requirement (implicit in R3).</p> <p>2. R2 of IRO-008 requires that Real-Time Assessments be performed at least every 30 minutes. The definition of Real-Time Assessment leaves open how far into the future the assessments must cover. Please clarify.</p> <p>Using the current definition for Real-Time Assessments, R2 of IRO-008 would require that a complete study for the remainder of the operating day be performed at least every 30 minutes.</p> <p>3. We believe it is more appropriate to consider Real-Time Assessment to mean the use of real-time information to assess system conditions for the current minute up to a certain time period, say, next hour. Operations Planning Analysis, which includes day at hand, should cover the remaining hours for the current day and beyond, up to about a year. We suggest the SDT consider revising the definitions in this manner to add clarity to R2 (and R1 as well) of IRO-008.</p> <p>4. R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct as deemed necessary" be inserted after "...the Reliability Coordinator shall share its results with" in R3.</p> <p>5. Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is the reason for having these terms defined?</p> <p>6. In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay.</p>



Question #15	
Commenter	Comment
	<p>7. In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document and complete an IROL violation report for each instance of exceeding an IROL for time greater than that limit's Tv. This requirement is currently stipulated in EOP-004, with cross reference to TOP-007. We feel it's more appropriate for the RC to make this report and hence this requirement should be added to IRO-009.</p> <p>8. We do not have any comments on the proposed measures. However, from a process viewpoint, none of the questions asked in this comment form seek concurrence or comments on any of the measures proposed. Since these measures did not exist in any of the current standards, and have been revised since the last draft versions (posted on March 1, 2004), the industry needs to have an opportunity to offer its view.</p>
<p><b>Response:</b></p> <p>1. IRO-007 does require the Reliability Coordinator to monitor its 'Wide Area' which is an approved, defined term – the definition of Wide Area is: The entire Reliability Coordinator Area as well as the critical flow and status information from adjacent Reliability Coordinator Areas as determined by detailed system studies to allow the calculation of Interconnection Reliability Operating Limits.</p> <p>2. The definition of Real-time Assessments doesn't require a complete study for the remainder of the operating day.</p> <p>3. The drafting team got consensus on these definitions with a prior posting.</p> <p>4. IRO-009-1 includes the Reliability Coordinator's directives.</p> <p>5. These definitions were used in earlier versions of the standard but aren't needed and have been deleted.</p> <p>6. The violation severity levels were revised to eliminate use of percentages. Note that the drafting team was advised to avoid defining terms such as 'delay' that have the same definition as that found in a Webster Dictionary.</p> <p>7. The drafting team eliminated these reporting requirements because they aren't needed to support reliability. The drafting team expects that any violation of an IROL will have an associated event investigation.</p> <p>8. This 'open-ended' question was intended to collect all comments that weren't provided elsewhere. If anyone has a comment on measures this was the place to provide them.</p>	
<p>NPCC CP9 ISO-NE Hydro-Québec TransÉnergie</p>	<p>1. R2 of IRO-008 requires clarification or the definition of Real-Time Assessments needs to be revised to capture that an assessment needs to be done every thirty minutes and specific made as to how far into the future the assessments must cover.</p> <p>2. R3 of IRO-008 requires sharing of results to prevent or mitigate exceeding an IROL. We feel that</p>

Question #15	
Commenter	Comment
	<p>this should also require an RC to direct taking necessary actions to prepare for correcting the situation. We therefore suggest that "and direct" be inserted after "...the Reliability Coordinator shall share its results with" in R3. This may clarify the IRO-008 standard but may introduce some redundancy with IRO-009 R3 and R4.</p> <p>3. Two new terms are defined in IRO-009: Interconnection Reliability Operating Limit Event and Interconnection Reliability Operating Limit Event Duration. Neither are used in this standard; so what is the reason for having these terms defined?</p> <p>4. In IRO-009, Violation Severity Levels, Section 2.3.2 establishes a high violation severity if an IROL was actually exceeded and there was a delay before taking action. The term "delay" is not defined. This leaves this term open for interpretation and will result in inconsistent enforcement. The standard needs to define what is meant by delay perhaps specifying a timeframe in the Requirements section R4. Also missing is the requirement to document, with a complete violation report, whenever an IROL violation has been exceeded beyond Tv.</p> <p>5. In the previous draft standard IRO-009, there was a requirement (R1.4) for the RC to document IROL violation incidents. This requirement is missing in the new version. NPCC Participating members believe that this requirement should be stated in this standard.</p> <p>6. NPCC participating members have also expressed concern about these same standards appearing in NERC's Reliability Coordinator SAR project. Coordination of the comments is a major concern especially when the standards will be under revision here and also in that project concurrently.</p>
	<p><b>Response:</b></p> <ol style="list-style-type: none"> <li>1. There are justifiable reasons for different Reliability Coordinators to use different time periods when looking into the future.</li> <li>2. IRO-009-1 includes the Reliability Coordinator's directives.</li> <li>3. These definitions were used in earlier versions of the standard but aren't needed and have been deleted.</li> <li>4. The violation severity levels were revised to eliminate use of percentages. Note that the drafting team was advised to avoid defining terms such as 'delay' that have the same definition as that found in a Webster Dictionary.</li> <li>5. The drafting team eliminated these reporting requirements because they aren't needed to support reliability. The drafting team expects that any violation of an IROL will have an associated event investigation.</li> </ol>

Question #15	
Commenter	Comment
<p>6. The Reliability Coordination SAR was modified to remove the proposed IROL Standards from the set of standards included in its scope.</p>	
ATC	<p>This effort must produce a clear definition of what an IROL is and the outcome being avoided by classifying an SOL as an IROL. The definition should include both Real-Time Operations and planning horizon perspectives. There is wide discretion between what everyone believes an IROL is and what events could reasonably be predicted to identify a triggering event that should be classified as an IROL. A clear definition is required in order to identify an IROL in Real-Time Operations and planning studies.</p> <p>IRO-007 Requirement R2 - Has the group discussed the possible situation in which the RCs do not agree that an IROL exists? This requirement gives the impression that an IROL has been agreed to by the RCs but the limit and/or Tv is in dispute. Because the definition of IROL is subjective two RCs could have variations of what SOLs should be classified as IROLs in Real-time.</p> <p>IRO-010 - Requirements 1.1, 1.3 and 1.4 seem to be a fill in the blank requirements for the RCs. This group should develop the data specification requirements.</p> <p>Requirement 1.2 should be deleted and replaced with the following:</p> <ul style="list-style-type: none"> <li>- Industry standard protocol or mutually agreeable format</li> </ul>
<p><b>Response:</b>                      The term, 'IROL' does have an approved definition. The definition of an IROL was addressed with FAC-010 and FAC-011.                      If Reliability Coordinators don't agree on an operating value, then the resolution of the disagreement is addressed by the requirement that says both Reliability Coordinators will use the most conservative of the values under consideration.                      Because each Reliability Coordinator has unique requirements based on the facilities within its boundaries and the tools it has under its control, each Reliability Coordinator should have the right to customize its data specification including the protocol and format in which the data must be provided.</p>	

January 9, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement: Comment Period Opens for Transmission Relay Loadability Standard;  
Nomination Period Opens for IROL Standard Drafting Team**

**The Standards Committee (SC) announces the following standards actions:**

**Transmission Relay Loadability Standard (January 9–February 7, 2007)**

The [Transmission Relay Loadability](#) Standard Drafting Team posted the second draft of its standard for a 30-day comment period from January 9 through February 7, 2007. This standard codifies the relay loadability criteria embodied in the NERC Recommendation 8a, *Improve System Protection to Slow or Limit the Spread of Future Cascading Outages*, and U.S.–Canada Power System Outage Task Force Recommendation 21A, *Make More Effective and Wider Use of System Protection Measures*. Please use the [comment form](#) to provide comments on this standard.

**Nominations for Operate within Interconnection Reliability Operating Limits  
Standard Drafting Team (January 9–19, 2007)**

The Standards Committee is seeking additional industry experts to serve on the existing Operate within [Interconnection Reliability Operating Limits](#) (IROLs) Standard Drafting Team. This set of standards addresses the Reliability Coordinator's preparations and actions relative to IROLs. If you are interested in serving on this team, please complete this [nomination form](#) and return it to Richard Schneider ([Richard.schneider@nerc.net](mailto:Richard.schneider@nerc.net)) no later than January 19, 2007.

**Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster

## IROL Standard Drafting Team — Nomination Form

Please return this form to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) by January 19. For questions, please contact Richard Schneider at 609-452-8060 or [richard.schneider@nerc.net](mailto:richard.schneider@nerc.net)

Name:	
Organization:	
Address:	
Office Telephone:	
E-mail:	
<p><b>Please briefly describe your experience and qualifications to serve on the IROL Standard Drafting Team. Prefer candidates with first-hand knowledge of the Reliability Coordinator's real-time tasks, including those tasks associated with coordinating operations within the Reliability Coordinator's Area and between Reliability Coordinator Areas. Previous experience working on or applying NERC or IEEE standards is beneficial, but not a requirement.</b></p>	
<p><b>I represent the following NERC Reliability Region(s) (check all that apply):</b></p> <p><input type="checkbox"/> ERCOT</p> <p><input type="checkbox"/> FRCC</p> <p><input type="checkbox"/> MRO</p> <p><input type="checkbox"/> NPCC</p> <p><input type="checkbox"/> RFC</p> <p><input type="checkbox"/> SERC</p> <p><input type="checkbox"/> SPP</p> <p><input type="checkbox"/> WECC</p> <p><input type="checkbox"/> NA – Not Applicable</p>	<p><b>I represent the following Industry Segment (check one):</b></p> <p><input type="checkbox"/> 1 — Transmission Owners</p> <p><input type="checkbox"/> 2 — RTOs, ISOs</p> <p><input type="checkbox"/> 3 — Load-serving Entities</p> <p><input type="checkbox"/> 4 — Transmission-dependent Utilities</p> <p><input type="checkbox"/> 5 — Electric Generators</p> <p><input type="checkbox"/> 6 — Electricity Brokers, Aggregators, and Marketers</p> <p><input type="checkbox"/> 7 — Large Electricity End Users</p> <p><input type="checkbox"/> 8 — Small Electricity End Users</p> <p><input type="checkbox"/> 9 — Federal, State, and Provincial Regulatory or other Government Entities</p> <p><input type="checkbox"/> 10 — Regional Reliability Organizations and Regional Entities</p>

**Which of the following Function(s) do you have expertise or responsibilities:**

- |  |  |
|--|--|
| <input type="checkbox"/> Reliability Coordinator | <input type="checkbox"/> Transmission Service Provider |
| <input type="checkbox"/> Balancing Authority     | <input type="checkbox"/> Transmission Owner            |
| <input type="checkbox"/> Interchange Authority   | <input type="checkbox"/> Load Serving Entity           |
| <input type="checkbox"/> Planning Authority      | <input type="checkbox"/> Distribution Provider         |
| <input type="checkbox"/> Transmission Operator   | <input type="checkbox"/> Purchasing-selling Entity     |
| <input type="checkbox"/> Generator Operator      | <input type="checkbox"/> Generator Owner               |
| <input type="checkbox"/> Transmission Planner    | <input type="checkbox"/> Resource Planner              |
|  | <input type="checkbox"/> Market Operator               |

**Provide the names and contact information for two references who could attest to your technical qualifications and your ability to work well in a group.**

Name: \_\_\_\_\_ Office Telephone: \_\_\_\_\_

Organization: \_\_\_\_\_ E-mail: \_\_\_\_\_

Name: \_\_\_\_\_ Office Telephone: \_\_\_\_\_

Organization: \_\_\_\_\_ E-mail: \_\_\_\_\_

## A. Introduction

1. **Title:** **Emergency Operations Planning**
2. **Number:** **EOP-001-1**
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- R2. Each Transmission Operator and Balancing Authority shall:
  - R2.1. Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R2.2. Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R2.3. Develop, maintain, and implement a set of plans for load shedding.
  - R2.4. Develop, maintain, and implement a set of plans for system restoration.
- R3. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R3.1. Communications protocols to be used during emergencies.
  - R3.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
  - R3.3. The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
  - R3.4. Staffing levels for the emergency.
- R4. Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

- R5. The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.
- R6. The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:
  - R6.1. The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.
  - R6.2. The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.
  - R6.3. The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
  - R6.4. The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

### C. Measures

- M1. The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2. The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

##### 1.3. Data Retention

Current plan available at all times.



**1.4. Additional Compliance Information**

Not specified.

**2. Levels of Non-Compliance**

- 2.1. Level 1:** One of the applicable elements of Attachment 1-EOP-001-0 has not been addressed in the emergency plans.
- 2.2. Level 2:** Two of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans.
- 2.3. Level 3:** Three of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans.
- 2.4. Level 4:** Four or more of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans or a plan does not exist.

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system's own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

## A. Introduction

1. **Title:** **Reliability Coordination — Facilities**
2. **Number:** IRO 002-2
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.
- R2. Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.
- R3. Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.
- R4. Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.
- R5. Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.
- R6. Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.

- R7.** Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

**C. Measures**

- M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 3.
- M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 3.
- M3.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.
- M4.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 5.
- M5.** Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 6)
- M6.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 7 Part 1.
- M7.** Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 7 Part 2.

**D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### **1.3. Data Retention**

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1 through 7.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

### **1.4. Additional Compliance Information**

None.

## **2. Levels of Non-Compliance for a Reliability Coordinator**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Did not confirm that the network used for data exchange to other Reliability Coordinators is secure as specified in R2.

**2.3. Level 3:** Does not control its Reliability Coordinator analysis tools, including the exercising of final approvals for planned maintenance (R5) or does not have current procedures in place to mitigate the effects of analysis tool outages as specified in R7.

**2.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

**2.4.1** Does not have or could not demonstrate the use of voice communication facilities (or show data links) to one or more Transmission Operators, Generator Operators or Balancing Authorities with authority over Bulk Electrical System equipment or with one or more neighboring Reliability Coordinators. (R1 and R3)

**2.4.2** Does not have real-time monitoring capability of its Reliability Coordinator Area and surrounding Reliability Coordinator Areas as specified in R4.

**2.4.3** Does not have a documented procedure for the use of its backup monitoring facilities. (R6)

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised

## A. Introduction

1. **Title:** ~~Reliability Coordination — Wide Area View~~
2. **Number:** ~~IRO-003-2~~
3. **Purpose:** ~~The Reliability Coordinator must have a wide-area view of its own Reliability Coordinator Area and that of neighboring Reliability Coordinators.~~
4. **Applicability**  
~~4.1. Reliability Coordinators.~~
5. **Effective Date:** ~~January 1, 2007~~ When IRO-007-1 becomes effective.

## B. Requirements

- ~~R1. Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~
- ~~R2. Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.~~

## C. Measures

- ~~M1. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection, or other equivalent evidence that will be used to confirm that it monitors adjacent Reliability Coordinator Areas as necessary to ensure that, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

~~Regional Reliability Organizations shall be responsible for compliance monitoring.~~
  - 1.2. **Compliance Monitoring and Reset Time Frame**

~~One or more of the following methods will be used to assess compliance:~~

    - ~~– Self-certification (Conducted annually with submission according to schedule.)~~
    - ~~– Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)~~

- ~~–Periodic Audit (Conducted once every three years according to schedule.)~~
- ~~–Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case by case basis.)~~

~~The Performance Reset Period shall be 12 months from the last finding of non-compliance.~~

### **1.3. Data Retention**

~~Each Reliability Coordinator shall have current in force documents used to show compliance with Measure 1.~~

~~If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.~~

~~Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,~~

~~The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.~~

### **1.4. Additional Compliance Information**

~~None.~~

## **2. Levels of Non-Compliance for a Reliability Coordinator**

**2.1. Level 1:** ~~Not applicable.~~

**2.2. Level 2:** ~~Not applicable.~~

**2.3. Level 3:** ~~Not applicable.~~

**2.4. Level 4:** ~~Did not produce acceptable evidence to confirm that it monitors adjacent Reliability Coordinator Areas as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~

## **E. Regional Differences**

~~None identified.~~



**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	February 7, 2006	Adopted by Board of Trustees	Revised
2	November 1, 2006	Adopted by Board of Trustees	Revised

Retire Entire Standard

**A. Introduction**

1. **Title:** ~~Reliability Coordination — Operations Planning~~
2. **Number:** ~~IRO-004-1~~
3. **Purpose:** ~~Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.~~
4. **Applicability**
  - ~~4.1. Reliability Coordinators.~~
  - ~~4.2. Balancing Authorities.~~
  - ~~4.3. Transmission Operators.~~
  - ~~4.4. Transmission Service Providers.~~
  - ~~4.5. Transmission Owners.~~
  - ~~4.6. Generator Owners.~~
  - ~~4.7. Generator Operators.~~
  - ~~4.8. Load-Serving Entities.~~
5. **Effective Date:** First day of first quarter, three months after regulatory approvals~~November 1, 2006~~

**B. Requirements**

- ~~**R1.** Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.~~
- ~~**R2.** Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.~~
- ~~**R3-R1.** \_\_\_\_\_ Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.~~
- ~~**R4.** Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.~~

~~R5.~~ Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.

~~R6.R2.~~ If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.

~~R7.~~ Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.

### C. Measures

~~M1.~~ Evidence that the Reliability Coordinator conducted next day contingency analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System could be operated reliably in anticipated normal and Contingency conditions.

### D. Compliance

#### 1. Compliance Monitoring Process

~~Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on-site audit, Reliability Coordinators will be asked to provide documentation showing that next-day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits; etc.~~

##### 1.1. Compliance Monitoring Responsibility

~~Self-Certification: Each Reliability Coordinator must annually self-certify compliance to its Regional Reliability Organization with the completion of the studies and action plans in Requirements R1, R2 and R3.~~

~~Exception Reporting: Reliability Coordinators will prepare a monthly report to the Regional Reliability Organization for each month that system studies were not conducted, indicating the dates that studies were not done and the reason why.~~

##### 1.2. Compliance Monitoring Period and Reset Time Frame

~~One year without a violation from the time of the violation.~~

##### 1.3. Data Retention

~~Documentation shall be available for 3 months to provide verification that system studies were performed as required.~~

##### 1.4. Additional Compliance Information

~~None identified.~~

#### 2. Levels of Non-Compliance

~~2.1. Level 1: System studies were not conducted for one day in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.2.2.1. Level 2: System studies were not conducted for 2–3 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.3.2.2. Level 3: System studies were not conducted for 4–5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.4.2.3. Level 4: System studies were not conducted for more than 5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

**E. Regional Differences**

~~None identified.~~

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## A. Introduction

1. **Title:** **Reliability Coordination — Current Day Operations**
2. **Number:** IRO-005-3
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. Each Reliability Coordinator shall be aware of all Interchange Transactions.
- R2. Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.
- R3. Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.
- R4. The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.
- R5. Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

- R6.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.
- R7.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.
- R8.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.
- R9.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.
- R10.** In instances where there is a difference in derived limits, the Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
- R11.** Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs and IROLs within its wide-area view. The Transmission Service Providers shall respect SOLs and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
- R12.** Each Reliability Coordinator who foresees a transmission problem (such as an IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.

### **C. Measures**

- M1.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Historical Tag Archive information, Interchange Transaction records, computer printouts, voice recordings or transcripts of voice

recordings or equivalent evidence that will be used to confirm that it was aware of Interchange Transaction information as specified in Requirement 1.

- M2.** If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 2 Part 2 and Requirement 7)
- M3.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 3)
- M4.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement 4.
- M5.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 5 Part 1.
- M6.** The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 5 Part 2)
- M7.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 6 Part 1)
- M8.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic

communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 8 Part 1)

- M9.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 9)
- M10.** If there is an instance where there is a disagreement on a derived limit, the Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (Requirement 10)
- M11.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it provided SOL and IROL information to Transmission Service Providers within its Reliability Coordinator Area. (Requirement 11, Part 1)
- M12.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.(Requirement 11 Part 2)
- M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 12 Part 1.
- M14.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 12 Part 2.
- M15.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice



recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated.  
(Requirement 12 Part 3)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### **1.3. Data Retention**

For Measure 9, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures 1–8, Measure 11, and Measures 13 through 15, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure 6, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure 10, the Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure 12, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

None.

**2. Levels of Non-Compliance for a Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Not applicable.

**2.3. Level 3:** Not applicable.

**2.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

**2.4.1** Did not follow the Reliability Coordinator's directives in accordance with R5 Part 2).

**2.4.2** Did not operate to the most limiting parameter when a difference in derived limits existed. (R10)

**3. Levels of Non-Compliance for a Reliability Coordinator:**

**3.1. Level 1:** Not applicable.

**3.2. Level 2:** Not applicable.

**3.3. Level 3:** There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:

**3.3.1** Did not communicate to each of its Balancing Authorities and Transmission Operators to make them aware of GMD forecast information or did not assist in the development of any required response plans to a predicted GMD. (Requirement 3)

**3.3.2** Did not disseminate information within its Reliability Coordinator Area. (Requirement 4)

**3.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

**3.4.1** Did not direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 2 Part 2)

**3.4.2** Did not monitor the system frequency or each of its Balancing Authorities performance or did not direct rebalancing to return to DCS and CPS compliance. (Requirement 5 Part 1)

- 3.4.3 Did not coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations. (Requirement 6)
- 3.4.4 When it identified a source of large Area Control Errors, it did not initiate corrective actions with the appropriate Balancing Authority if the problem was inside its Reliability Coordinator Area. (Requirement 8 part 1)
- 3.4.5 Did not provide evidence that it was aware of the impact of the operation of a Special Protection System on inter-area flows. (Requirement 9)
- 3.4.6 Did not issue alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area. (Requirement 12)

**4. Levels of Non-Compliance for a Transmission Service Provider**

- 4.1. **Level 1:** Not applicable.
- 4.2. **Level 2:** Not applicable.
- 4.3. **Level 3:** Not applicable.
- 4.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
  - 4.4.1 Did not operate to the most limiting parameter when a difference in derived limits existed. (R10)
  - 4.4.2 Did not respect the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.(Requirement 141)

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## Standard Development Roadmap

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### Development Steps Completed:

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#### Anticipated Date

March 15–April 13, 2007  
April 16–25, 2007  
May 1–10, 2007  
To be determined  
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### Definitions of Terms Used in Standard

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**Real-Time Data:** Real-Time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

## A. Introduction

1. **Title:** **Monitoring the Reliability Coordinator Wide Area**
2. **Number:** IRO-007-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is continuously monitored.
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs). (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations*)
- R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have Real-Time Data for system operating parameters within its Wide Area available in a form that its System Operators can compare to its IROLs as evidence of real-time monitoring.
- M2. For an IROL or its  $T_v$  without agreement between Reliability Coordinators, the Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence to confirm that it used the most conservative of the values under consideration.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Entity
  - 1.2. **Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The Reliability Coordinator shall have evidence of compliance with M1 upon request.

The Reliability Coordinator shall keep evidence to show compliance with M2 for three calendar years

The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall demonstrate the following to its Compliance Monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:

**1.4.1** Its System Operators actively monitoring and comparing Real-Time system operating parameters associated with IROLs.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Not applicable.

**2.3. High:** Not applicable.

**2.4. Severe:** A severe violation occurs if either of the following conditions are present:

**2.4.1** System operating parameters not monitored in Real-Time and compared against IROLs.

**2.4.2** There was a disagreement on the IROL or its  $T_v$  and the most conservative limit under consideration was not used.

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

## **Standard Development Roadmap**

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To be determined  
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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## **A. Introduction**

- 1. Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
- 2. Number:** IRO-008-1
- 3. Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
- 4. Applicability**
  - 4.1.** Reliability Coordinator.
- 5. Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## **B. Requirements.**

- R1.** The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2.** The Reliability Coordinator shall perform Real-Time Assessments at least every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3.** When the results of the Reliability Coordinator's Operational Planning Analyses or Real-Time Assessments indicate the need for specific operational actions to prevent or mitigate instances of exceeding IROLs, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

## **C. Measures**

- M1.** The Reliability Coordinator shall have, and provide upon request, the results of its latest Operational Planning Analysis.
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to computer output, operator logs, checklists, or other evidence to show it conducted a Real-Time Assessment at least once every 30 minutes.
- M3.** The Reliability Coordinator shall have and provide upon request, evidence that could include, but is not limited to operating logs, voice recordings, transcripts of voice records, facsimiles, or other equivalent evidence that will be used to confirm that it shared the results of its Operational Planning Analyses and Real-Time Assessments with those entities expected to take actions based on that information.

## **D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Electric Reliability Organization

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.

**1.3. Data Retention**

The Compliance Monitor shall keep audited data for three calendar years.

The Reliability Coordinator shall keep its latest day-ahead Operational Planning Analysis.

The Reliability Coordinator shall keep evidence for M2 for the most recent two days.

The Reliability Coordinator shall keep evidence for M3 for one month.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Shared the results with some but not all of the entities that were required to take action (R3).

**2.3. High:** Real-Time Assessments were conducted but not as frequently as required (R2).

**2.4. Severe:** A severe violation exists if any of the following conditions are present:

**2.4.1** Did not perform an Operational Planning Analysis for the next day in accordance with R1.

**2.4.2** Did not perform any Real-time Assessments for any continuous eight-hour period (R2).

**2.4.3** Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

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**Occurrence Period:** The time period in which performance is measured and evaluated.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1.** For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2.** For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shed) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3.** When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4.** When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

## C. Measures

- M1.** The Reliability Coordinator shall have, and provide upon request, one or more documented Operating Processes, Procedures, or Plans that that will be used to confirm that it has Operating Processes, Procedures or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement 1 and Requirement 2.
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice

recordings, or other equivalent evidence that will be used to confirm that it acted or directed others to act in accordance with Requirement 3 and Requirement 4.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Electric Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall keep IROL Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. If an IROL is exceeded for time greater than  $T_v$ , the Reliability Coordinator shall complete and submit to its Compliance Monitor within five days, an IROL Violation Report.

The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances.

**1.4.2** IROL Violation Reports.

### 2. Violation Severity Levels

**2.1. Low:** Not applicable.

**2.2. Moderate** Not applicable.

**2.3. High:** Not applicable.

**2.4. Severe:** **There shall be a severe violation severity level if any of the following conditions exist:**

**2.4.1** One or more IROLs identified in advance of real-time do not have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

- 2.4.2 An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures or Plans were implemented to prevent exceeding that IROL. (R3)
- 2.4.3 Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five<sup>1</sup> minutes or more before taking a control action or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)
- 2.4.4 Actual system conditions showed that there was an instance of exceeding an IROL, and no actions or directions were given to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)

**E. Regional Differences**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

Version	Date	Action	Change Tracking

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<sup>1</sup> The five minutes is not a ‘grace period’ before taking any action – the five minutes recognizes that the first actions taken may not result in an action that can be independently confirmed.



## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
3. SAC approves development of standard (November 20, 2003).
4. JIC assigns development of standard to NERC (January 10, 2003).
5. Drafting team posts drafts for comment (February 18–April 2, 2003) (July 1–August 29, 2003).
6. Balloted December 18, 2003–January 6, 2004.
7. Drafting team posts drafts for comment (March 1–April 14, 2004).
8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007).

### Description of Current Draft:

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team has asked the Standards Committee for authorization to post the standards and implementation plan for a 30-day, pre-ballot review.

### Future Development Plan:

#### Anticipated Actions

1. Post for 30-day pre-ballot period.
2. First ballot of standards.
3. Recirculation ballot of standards.
4. 30-day posting before board adoption.
5. Board adopts standards.

#### Anticipated Date

March 15–April 13, 2007  
April 16–25, 2007  
May 1–10, 2007  
To be determined  
To be determined

### **Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

*None introduced in this standard.*

## A. Introduction

1. **Title:**           **Reliability Coordinator Data Specification and Collection**
2. **Number:**       IRO-010-1
3. **Purpose:**        To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:**   The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
  - R1.1. List of required data and information
  - R1.2. Mutually agreeable format
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.
- R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and

Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

### **C. Measures**

- M1.** The Reliability Coordinator shall have, and provide upon request, a documented data specification that contains all elements identified in Requirement 1.
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.
- M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and provide upon request, evidence that could include but is not limited to, operator logs, voice recordings, computer printouts, SCADA data, or other equivalent evidence that will be used to confirm that it provided data and information, as specified in Requirement 3.

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Monitoring Responsibility**

Electric Reliability Organization

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.

##### **1.3. Data Retention**

The Reliability Coordinator shall keep its most current data specification.

The Reliability Coordinator shall keep evidence to show compliance with Measure 2

For data that is requested in advance of real-time, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Measure 3 for 3 months.

The Compliance Monitor shall keep audited data for three calendar years.

##### **1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

1.4.1 Data specification(s).

1.4.2 Proof of distribution of the data specification(s).

**2. Violation Severity Levels for the Reliability Coordinator**

**2.1. Lower: There shall be a lower violation severity level if any of the following conditions exist:**

2.1.1 Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.1.2 Provided greater than or equal to 95%- but less then 100% of the data and information to other Reliability Coordinators as specified. (R3)

**2.2. Moderate: There shall be a moderate violation severity level of any of the following conditions exist:**

2.2.1 Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.2.2 Provided greater than or equal to 85%, but less than 95% of the data and information to other Reliability Coordinators as specified. (R3)

**2.3. High: There shall be a high violation severity level of any of the following conditions exist:**

2.3.1 Data specification incomplete (missing one of the following: list of required data, a mutually agreeable format, a timeframe for providing data, a data provision process to use when automated Real-Time system operating data is unavailable). (R1)

2.3.2 Distributed its data specification to greater than or equal to 70%- but less then 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.3.3 Provided greater than or equal to 70%- but less then 85% of the data and information to other Reliability Coordinators as specified. (R3)

**2.4. Severe: There shall be a severe violation severity level of any of the following conditions exist:**

2.4.1 No data specification (R1)

2.4.2 Data specification distributed to less than 70% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.4.3 Provided less than 70% of the data and information to other Reliability Coordinators as specified. (R3)

**3. Violation Severity Levels for the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner**

3.1. **Lower:** Provided greater than or equal to 95%- but less then 100% of the data and information to the Reliability Coordinator as specified. (R3)

3.2. **Moderate:** Provided greater than or equal to 85%, but less than 95% of the data and information to the Reliability Coordinator as specified. (R3)

3.3. **High:** Provided greater than or equal to 70%, but less than 85% of the data and information to the Reliability Coordinator as specified. (R3)

3.4. **Severe:** Provided less than 70% of the data and information to the Reliability Coordinator as specified. (R3)

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

## A. Introduction

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-1
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.
- R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

## C. Measures

- M1.** Evidence that the Generator Operator, Transmission Operator, and Balancing Authority reported and coordinated scheduled outage information as indicated in the requirements above.

## D. Compliance

### 1. Compliance Monitoring Process

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

#### 1.1. Compliance Monitoring Responsibility

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

One calendar year without a violation from the time of the violation.

#### 1.3. Data Retention

One calendar year.

#### 1.4. Additional Compliance Information

Not specified.

### 2. Levels of Non-Compliance

**2.1. Level 1:** Each entity responsible for reporting information under Requirements R1 and R3 has a process in place to provide information to their Reliability Coordinator but does not have a process in place (where permitted by legal agreements) to provide this information to the neighboring Balancing Authority or Transmission Operator.

**2.2. Level 2:** N/A.

**2.3. Level 3:** N/A.



- 2.4. Level 4:** There is no process in place to exchange outage information, or the entity responsible for reporting information under Requirements R1 to R3 does not follow the directives of the Reliability Coordinator to cancel or reschedule an outage.

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## A. Introduction

1. **Title:** **Operational Reliability Information**
2. **Number:** TOP-005-2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Purchasing Selling Entities.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”
- R2. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.
- R3. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

## C. Measures

- M1. Evidence that the Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

**1.2. Compliance Monitoring Period and Reset Time Frame**

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

Not specified.

**1.4. Additional Compliance Information**

Not specified.

**2. Levels of Non-Compliance**

**2.1. Level 1:** Each entity responsible for reporting information under Requirements R1 to R3 is providing the requesting entities with the data required, in specified time intervals and format, but there are problems with consistency of delivery identified in the measuring process that need remedy (e.g., the data is not supplied consistently due to equipment malfunctions, or scaling is incorrect).

**2.2. Level 2:** N/A.

**2.3. Level 3:** N/A.

**2.4. Level 4:** Each entity responsible for reporting information under Requirements R1 to R3 is not providing the requesting entities with data with the specified content, timeliness, or format. The information missing is included in the requesting entity's list of data.

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed "Proposed" from Effective Date	Errata

**Attachment 1-TOP-005-0**  
**Electric System Reliability Data**

This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.

1. The following information shall be updated at least every ten minutes:
  - 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:
    - 1.1.1 Status.
    - 1.1.2 MW or ampere loadings.
    - 1.1.3 MVA capability.
    - 1.1.4 Transformer tap and phase angle settings.
    - 1.1.5 Key voltages.
  - 1.2. Generator data.
    - 1.2.1 Status.
    - 1.2.2 MW and MVAR capability.
    - 1.2.3 MW and MVAR net output.
    - 1.2.4 Status of automatic voltage control facilities.
  - 1.3. Operating reserve.
    - 1.3.1 MW reserve available within ten minutes.
  - 1.4. Balancing Authority demand.
    - 1.4.1 Instantaneous.
  - 1.5. Interchange.
    - 1.5.1 Instantaneous actual interchange with each Balancing Authority.
    - 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.
    - 1.5.3 Interchange Schedules for the next 24 hours.
  - 1.6. Area Control Error and frequency.
    - 1.6.1 Instantaneous area control error.
    - 1.6.2 Clock hour area control error.
    - 1.6.3 System frequency at one or more locations in the Balancing Authority.
2. Other operating information updated as soon as available.
  - 2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.

- 2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.
- 2.3. Forecast peak demand for current day and next day.
- 2.4. Forecast changes in equipment status.
- 2.5. New facilities in place.
- 2.6. New or degraded special protection systems.
- 2.7. Emergency operating procedures in effect.
- 2.8. Severe weather, fire, or earthquake.
- 2.9. Multi-site sabotage.

## A. Introduction

1. **Title:** **Monitoring System Conditions**
2. **Number:** **TOP-006-2**
3. **Purpose:**  
To ensure critical reliability parameters are monitored in real-time.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Generator Operators.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.
  - R1.1. Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
  - R1.2. Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
- R2. Each, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.
- R3. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.
- R4. Each Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.
- R5. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions and to indicate, if appropriate, the need for corrective action.
- R6. Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.

- R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

**C. Measures**

- M1. The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### **1.3. Data Retention**

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.

Each Reliability Coordinator shall have current documents as evidence for Measure 5 and 6.

Each Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

### **1.4. Additional Compliance Information**

None.

## **2. Levels of Non-Compliance for Reliability Coordinators:**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Not applicable.

**2.3. Level 3:** Not applicable.



- 2.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
  - 2.4.1 Not applicable.
  - 2.4.2 Not applicable.
  - 2.4.3 Did not bring to the attention of its operators, important deviations in operating conditions and the need for corrective actions. (Requirement 5)
  - 2.4.4 No evidence it monitors system frequency. (Requirement 7)

**3. Levels of Non-Compliance for Generator Operators:**

- 3.1. **Level 1:** Not applicable.
- 3.2. **Level 2:** Not applicable.
- 3.3. **Level 3:** Not applicable.
- 3.4. **Level 4:** Did not inform its Host Balancing Authority and/or the Transmission Operator of all generation resources available for use. (R1.1)

**4. Levels of Non-Compliance for Transmission Operators and Balancing Authorities:**

- 4.1. **Level 1:** Not applicable.
- 4.2. **Level 2:** Not applicable.
- 4.3. **Level 3:** Not applicable.
- 4.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:
  - 4.4.1 Did not inform the Reliability Coordinator and/or other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use in accordance with R1.2.
  - 4.4.2 Does not monitor all the applicable items listed in R2.
  - 4.4.3 Did not have the information specified in R4.
  - 4.4.4 Does not have monitoring to bring to the attention of operating personnel important deviations in operating conditions and the need for corrective actions as specified in R5.
  - 4.4.5 No evidence it monitors system frequency. (R7).

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective	Errata

**Standard TOP-006-2 — Monitoring System Conditions**

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		Date	
1	November 1, 2006	Adopted by Board of Trustees	Revised

## A. Introduction

1. **Title:** Emergency Operations Planning
2. **Number:** EOP-001-~~0~~1
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1. First day of first quarter, three months after regulatory approvals April 1, 2005

## B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.

~~R2. The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.~~

~~R3.R2.~~ Each Transmission Operator and Balancing Authority shall:

~~R3.1.R2.1.~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.

~~R3.2.R2.2.~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.

~~R3.3.R2.3.~~ Develop, maintain, and implement a set of plans for load shedding.

~~R3.4.R2.4.~~ Develop, maintain, and implement a set of plans for system restoration.

~~R4.R3.~~ Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:

~~R4.1.R3.1.~~ Communications protocols to be used during emergencies.

~~R4.2.R3.2.~~ A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

~~R4.3.R3.3.~~ The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.

~~R4.4.R3.4.~~ Staffing levels for the emergency.

~~R5.R4.~~ Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

~~R6.R5.~~ The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.

~~R7.R6.~~ The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:

~~R7.1.R6.1.~~ The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.

~~R7.2.R6.2.~~ The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.

~~R7.3.R6.3.~~ The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)

~~R7.4.R6.4.~~ The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

## C. Measures

- M1. The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2. The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

**1.3. Data Retention**

Current plan available at all times.

**1.4. Additional Compliance Information**

Not specified.

**2. Levels of Non-Compliance**

**2.1. Level 1:** One of the applicable elements of Attachment 1-EOP-001-0 has not been addressed in the emergency plans.

**2.2. Level 2:** Two of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans.

**2.3. Level 3:** Three of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans.

**2.4. Level 4:** Four or more of the applicable elements of Attachment 1-EOP-001-0 have not been addressed in the emergency plans or a plan does not exist.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## Attachment 1-EOP-001-0

### Elements for Consideration in Development of Emergency Plans

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system's own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.

15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

## A. Introduction

1. **Title:** Reliability Coordination — Facilities
2. **Number:** IRO 002-~~12~~
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.
5. **Proposed Effective Date:** ~~January 1, 2007~~ The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1. First day of first quarter, three months after regulatory approvals.

## B. Requirements

**R1.** Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.

~~**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.~~

**R3.R2.** Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.

**R4.R3.** Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.

**R5.R4.** Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.

~~**R6.** Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and~~



~~the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.~~

**R7.R5.** Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.

**R8.R6.** Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.

**R9.R7.** Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

### C. Measures

**M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 4.3.

**M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 4.3.

~~**M3.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a letter to Transmission Operators, Balancing Authorities, Transmission Owners, Generator Owners, Generator Operators, and Load-Serving Entities, or adjacent Reliability Coordinators, or other equivalent evidence that will be used to confirm that the Reliability Coordinator has requested the data required to support its reliability coordination tasks. (Requirement 2)~~

**M4.M3.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.

**M5.M4.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other

equivalent evidence to show that it has analysis tools in accordance with Requirement 57.

M6:M5. Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 86)

M7:M6. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 9-7 Part 1.

M8:M7. Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 9-7 Part 2.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

#### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### 1.3. Data Retention

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1 through 87.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

None.

**2. Levels of Non-Compliance for a Reliability Coordinator**

**2.1. Level 1:** Not applicable.

**2.2. Level 2:** Did not confirm that the network used for data exchange to other Reliability Coordinators is secure as specified in ~~R3R2~~.

~~**2.3. Level 3:** There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~**2.3.1** Has not requested the data required to support its reliability coordination tasks. (Requirement 2)~~

~~**2.3.2.3.** Does not control its Reliability Coordinator analysis tools, including the exercising of final approvals for planned maintenance (~~R7R5~~) or does not have current procedures in place to mitigate the effects of analysis tool outages as specified in ~~R9R7~~.~~

**2.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

**2.4.1** Does not have or could not demonstrate the use of voice communication facilities (or show data links) to one or more Transmission Operators, Generator Operators or Balancing Authorities with authority over Bulk Electrical System equipment or with one or more neighboring Reliability Coordinators. (R1 and ~~R4R3~~)

**2.4.2** Does not have real-time monitoring capability of its Reliability Coordinator Area and surrounding Reliability Coordinator Areas as specified in ~~R5R4~~.

**2.4.3** Does not have a documented procedure for the use of its backup monitoring facilities. (~~R8R6~~)

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective	Errata

		Date	
1	November 1, 2006	Adopted by Board of Trustees	Revised

Retire entire standard

## A. Introduction

1. **Title:** ~~Reliability Coordination — Wide Area View~~
2. **Number:** ~~IRO-003-2~~
3. **Purpose:** ~~The Reliability Coordinator must have a wide-area view of its own Reliability Coordinator Area and that of neighboring Reliability Coordinators.~~
4. **Applicability**  
~~4.1. Reliability Coordinators.~~
5. **Effective Date:** ~~January 1, 2007~~ When IRO-007-1 becomes effective.

## B. Requirements

- ~~R1. Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~
- ~~R2. Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.~~

## C. Measures

- ~~M1. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection, or other equivalent evidence that will be used to confirm that it monitors adjacent Reliability Coordinator Areas as necessary to ensure that, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

~~Regional Reliability Organizations shall be responsible for compliance monitoring.~~
  - 1.2. **Compliance Monitoring and Reset Time Frame**

~~One or more of the following methods will be used to assess compliance:~~

    - ~~– Self-certification (Conducted annually with submission according to schedule.)~~
    - ~~– Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)~~

- ~~–Periodic Audit (Conducted once every three years according to schedule.)~~
- ~~–Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case by case basis.)~~

~~The Performance Reset Period shall be 12 months from the last finding of non-compliance.~~

### **1.3. Data Retention**

~~Each Reliability Coordinator shall have current in force documents used to show compliance with Measure 1.~~

~~If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.~~

~~Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor.~~

~~The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.~~

### **1.4. Additional Compliance Information**

~~None.~~

## **2. Levels of Non-Compliance for a Reliability Coordinator**

**2.1. Level 1:** ~~Not applicable.~~

**2.2. Level 2:** ~~Not applicable.~~

**2.3. Level 3:** ~~Not applicable.~~

**2.4. Level 4:** ~~Did not produce acceptable evidence to confirm that it monitors adjacent Reliability Coordinator Areas as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.~~

## **E. Regional Differences**

~~None identified.~~

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	February 7, 2006	Adopted by Board of Trustees	Revised
2	November 1, 2006	Adopted by Board of Trustees	Revised

Retire Entire Standard

**A. Introduction**

1. **Title:** ~~Reliability Coordination — Operations Planning~~
2. **Number:** ~~IRO-004-1~~
3. **Purpose:** ~~Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.~~
4. **Applicability**
  - ~~4.1. Reliability Coordinators.~~
  - ~~4.2. Balancing Authorities.~~
  - ~~4.3. Transmission Operators.~~
  - ~~4.4. Transmission Service Providers.~~
  - ~~4.5. Transmission Owners.~~
  - ~~4.6. Generator Owners.~~
  - ~~4.7. Generator Operators.~~
  - ~~4.8. Load-Serving Entities.~~
5. **Effective Date:** First day of first quarter, three months after regulatory approvals~~November 1, 2006~~

**B. Requirements**

- ~~**R1.** Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.~~
- ~~**R2.** Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.~~
- ~~**R3-R1.** \_\_\_\_\_ Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.~~
- ~~**R4.** Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.~~



~~R5. Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.~~

~~R6.R2. If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.~~

~~R7. Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.~~

### C. Measures

~~M1. Evidence that the Reliability Coordinator conducted next day contingency analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System could be operated reliably in anticipated normal and Contingency conditions.~~

### D. Compliance

#### 1. Compliance Monitoring Process

~~Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on-site audit, Reliability Coordinators will be asked to provide documentation showing that next-day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits; etc.~~

##### 1.1. Compliance Monitoring Responsibility

~~Self-Certification: Each Reliability Coordinator must annually self-certify compliance to its Regional Reliability Organization with the completion of the studies and action plans in Requirements R1, R2 and R3.~~

~~Exception Reporting: Reliability Coordinators will prepare a monthly report to the Regional Reliability Organization for each month that system studies were not conducted, indicating the dates that studies were not done and the reason why.~~

##### 1.2. Compliance Monitoring Period and Reset Time Frame

~~One year without a violation from the time of the violation.~~

##### 1.3. Data Retention

~~Documentation shall be available for 3 months to provide verification that system studies were performed as required.~~

##### 1.4. Additional Compliance Information

~~None identified.~~

#### 2. Levels of Non-Compliance

~~2.1. Level 1: System studies were not conducted for one day in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.2.2.1. Level 2: System studies were not conducted for 2–3 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.3.2.2. Level 3: System studies were not conducted for 4–5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.4.2.3. Level 4: System studies were not conducted for more than 5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

**E. Regional Differences**

~~None identified.~~

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## A. Introduction

1. **Title:** Reliability Coordination — Current Day Operations
2. **Number:** IRO-005-~~23~~
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.

**5. Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1. First day of first quarter, three months after regulatory approvals January 1, 2007

## B. Requirements

- ~~R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:~~
- ~~R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.~~
  - ~~R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.~~
  - ~~R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.~~
  - ~~R1.4. System real and reactive reserves (actual versus required).~~
  - ~~R1.5. Capacity and energy adequacy conditions.~~
  - ~~R1.6. Current ACE for all its Balancing Authorities.~~
  - ~~R1.7. Current local or Transmission Loading Relief procedures in effect.~~
  - ~~R1.8. Planned generation dispatches.~~

~~R1.9.Planned transmission or generation outages.~~

~~R1.10.Contingency events.~~

~~R2.Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.~~

~~R3.As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.~~

R4.R1. Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.

~~R5.Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.~~

R6.R2. Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.

R7.R3. The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.

R8.R4. Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

R9.R5. The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

**R10.R6.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.

**R11.R7.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.

**R12.R8.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

**R10.R9.** ~~Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection.~~ In instances where there is a difference in derived limits, the **Reliability Coordinator and its** Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.

**R11.R10.** ~~Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view.~~ The Transmission Service Providers shall respect **these** SOLs ~~or and~~ IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.

**R15.R11.** Each Reliability Coordinator who foresees a transmission problem (such as an ~~SOL or~~ IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.

~~**R16.** Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.~~

~~R17. When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.~~

### C. Measures

~~M1. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.~~

M1. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Historical Tag Archive information, Interchange Transaction records, computer printouts, voice recordings or transcripts of voice recordings or equivalent evidence that will be used to confirm that it was aware of ~~and made~~ Interchange Transaction information ~~available to all other Reliability Coordinators,~~ as specified in Requirement ~~2~~1.

~~M3. If a potential or actual IROL violation occurs, the Reliability Coordinator involved in the event shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, system event logs, operator action notes or equivalent evidence that will be used to determine if it initiated control actions or emergency procedures to relieve that IROL violation within 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~

M2. If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement ~~4~~2 Part 2 and Requirement ~~10~~7)

M3. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement ~~6~~3)

M4. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice

recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement ~~7~~4.

- M5.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement ~~8~~5 Part 1.
- M6.** The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement ~~8~~5 Part 2)
- M7.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement ~~9~~6 Part 1)
- M8.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement ~~11~~8 Part 1)
- M9.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement ~~12~~9)
- M10.** If there is an instance where there is a disagreement on a derived limit, the ~~Reliability Coordinator~~, Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (~~Part 2 of~~ Requirement ~~13~~10)

**M13.M11.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it provided SOL and IROL information to Transmission Service Providers within its Reliability Coordinator Area. (Requirement 14.11, Part 1)

**M14.M12.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14.11 Part 2)

**M15.M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 15.12 Part 1.

**M16.M14.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 15.12 Part 2.

**M17.M15.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated. (Requirement 15.12 Part 3)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)



- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### 1.3. Data Retention

For Measures ~~1-9~~ and ~~11~~, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures ~~21-10-8~~ and ~~1311~~, and Measures ~~15-13~~ through ~~1615~~, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure ~~68~~, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure ~~1210~~, the ~~Reliability Coordinator~~, Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure ~~1412~~, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

### 1.4. Additional Compliance Information

None.

## 2. Levels of Non-Compliance for a Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider

2.1. Level 1: Not applicable.

2.2. Level 2: Not applicable.

2.3. Level 3: Not applicable.

2.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

2.4.1 Did not follow the Reliability Coordinator's directives in accordance with ~~R8-R5~~ Part 2).

2.4.2 Did not operate to the most limiting parameter when a difference in derived limits existed. (~~R13-R10~~Part 2)

3. **Levels of Non-Compliance for a Reliability Coordinator:**

3.1. **Level 1:** Not applicable.

3.2. **Level 2:** ~~Did not make Interchange Transaction information available to all other Reliability Coordinators in the Interconnection. (Requirement 2)~~Not applicable.

3.3. **Level 3:** There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:

3.3.1 Did not communicate to each of its Balancing Authorities and Transmission Operators to make them aware of GMD forecast information or did not assist in the development of any required response plans to a predicted GMD. (Requirement ~~6~~3)

3.3.2 Did not disseminate information within its Reliability Coordinator Area. (Requirement ~~7~~4)

3.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

~~3.4.1 Does not meet one or more of the requirements as specified in requirement 1 (Requirements 1.1 through R1.9)~~

~~3.4.2 Did not make Interchange Transaction information available to all other Reliability Coordinators. (Requirement 2)~~

~~3.4.3 Did not initiate control actions or emergency procedures to relieve an IROL violation without delay, and no longer than 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~

~~3.4.4.1~~ Did not direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement ~~4~~2 Part 2)

~~3.4.5.4.2~~ Did not monitor the system frequency or each of its Balancing Authorities performance or did not direct rebalancing to return to DCS and CPS compliance. (Requirement ~~8~~5 Part 1)

~~3.4.6.3.4.3~~ Did not coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. (Requirement ~~9~~6)

~~3.4.7.3.4.4~~ When it identified a source of large Area Control Errors, it did not initiate corrective actions with the appropriate Balancing Authority if the

problem was inside its Reliability Coordinator Area. (Requirement ~~11-8~~ part 1)

~~3.4.83.4.5~~ Did not provide evidence that it was aware of the impact of the operation of a Special Protection System on inter-area flows. (Requirement ~~129~~)

~~3.4.9~~ Did not operate to the most limiting parameter when a difference in derived limits existed. (Requirement ~~13 Part 2~~)

~~3.4.10~~ Did not provide Transmission Service Providers with SOLs or IROLs (within the Reliability Coordinator’s wide-area view) (Requirement ~~14 Part 1~~)

~~3.4.113.4.6~~ Did not issue alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area. (Requirement ~~1512~~)

**4. Levels of Non-Compliance for a Transmission Service Provider**

4.1. Level 1: Not applicable.

4.2. Level 2: Not applicable.

4.3. Level 3: Not applicable.

4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

4.4.1 Did not operate to the most limiting parameter when a difference in derived limits existed. (~~R13-R10~~Part 2)

4.4.2 Did not respect the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14-~~Part 12~~)

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
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### Description of Current Draft:

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### Future Development Plan:

#### Anticipated Actions

1. Post for 30-day pre-ballot period.
2. First ballot of standards.
3. Recirculation ballot of standards.
4. 30-day posting before board adoption.
5. Board adopts standards.

#### Anticipated Date

March 15–April 13, 2007  
April 16–25, 2007  
May 1–10, 2007  
To be determined  
To be determined

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Real-Time Data:** Real-Time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

## A. Introduction

1. **Title:** **Monitoring the Reliability Coordinator Wide Area**
2. **Number:** IRO-007-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is continuously monitored.
4. **Applicability**
  - 4.1. Reliability Coordinator

**B.5. Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements.

- R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs). (*Violation Risk Factor: Medium*) (~~Mitigation~~-Time Horizon: Real-time Operations)
- R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (*Violation Risk Factor: High*) (~~Mitigation~~-Time Horizon: Real-time Operations)

## C. Measures

- M1. The Reliability Coordinator shall have Real-Time Data for system operating parameters within its Wide Area available in a form that its System Operators can compare to its IROLs as evidence of real-time monitoring.
- M2. For an IROL or its  $T_v$  without agreement between Reliability Coordinators, the Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence to confirm that it used the most conservative of the values under consideration.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

~~Electric Reliability Organization Regional Entity~~

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall have evidence of compliance with M1 upon request.

The Reliability Coordinator shall keep evidence to show compliance with M2 for three calendar years

The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall demonstrate the following to its Compliance Monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:

**1.4.1** Its System Operators actively monitoring and comparing Real-Time system operating parameters associated with IROLs.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Not applicable.

**2.3. High:** Not applicable.

**2.4. Severe:** A severe violation occurs if either of the following conditions are present:

**2.4.1** System operating parameters not monitored in Real-Time and compared against IROLs.

**2.4.2** There was a disagreement on the IROL or its  $T_v$  and the most conservative limit under consideration was not used.

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

## Standard Development Roadmap

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- |  |                         |
|--|-------------------------|
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### **Definitions of Terms Used in Standard**

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## A. Introduction

1. **Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (~~Mitigation-Time Horizon: Operations Planning~~)
- R2. The Reliability Coordinator shall perform Real-Time Assessments at least every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (~~Mitigation-Time Horizon: Real-time Operations~~)
- R3. When the results of the Reliability Coordinator's Operational Planning Analyses or Real-Time Assessments indicate the need for specific operational actions to prevent or mitigate instances of exceeding IROLs, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (~~Mitigation-Time Horizon:~~ Real-time Operations or Same Day Operations)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, the results of its latest Operational Planning Analysis.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to computer output, operator logs, checklists, or other evidence to show it conducted a Real-Time Assessment at least once every 30 minutes.
- M3. The Reliability Coordinator shall have and provide upon request, evidence that could include, but is not limited to operating logs, voice recordings, transcripts of voice records, facsimiles, or other equivalent evidence that will be used to confirm that it shared the results of its Operational Planning Analyses and Real-Time Assessments with those entities expected to take actions based on that information.

## D. Compliance

1. **Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Electric Reliability Organization

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.

**1.3. Data Retention**

The Compliance Monitor shall keep audited data for three calendar years.

The Reliability Coordinator shall keep its latest day-ahead Operational Planning Analysis.

The Reliability Coordinator shall keep evidence for M2 for the most recent two days.

The Reliability Coordinator shall keep evidence for M3 for one month.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Shared the results with some but not all of the entities that were required to take action (R3).

**2.3. High:** Real-Time Assessments were conducted but not as frequently as required (R2).

**2.4. Severe:** A severe violation exists if any of the following conditions are present:

**2.4.1** Did not perform an Operational Planning Analysis for the next day in accordance with R1.

**2.4.2** Did not perform any Real-time Assessments for any continuous eight-hour period (R2).

**2.4.3** Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

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~~**Interconnection Reliability Operating Limit Event:** Any instance of exceeding an Interconnection Reliability Operating Limit for a minimum of 30 continuous seconds.~~

~~**Interconnection Reliability Operating Limit Event Duration:** The length of time an Interconnection Reliability Operating Limit is exceeded. The duration is measured from the point in time where the limit is first exceeded for at least 30 continuous seconds and ends at the beginning of the continuous 30 seconds in which the value returns to within the Interconnection Reliability Operating Limit.~~

**Occurrence Period:** The time period in which performance is measured and evaluated.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (~~Mitigation~~-Time Horizon: Operations Planning or Same Day Operations)
- R2. For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shed) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (~~Mitigation~~-Time Horizon: Operations Planning or Same Day Operations)
- R3. When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL. (*Violation Risk Factor: High*) (~~Mitigation~~-Time Horizon: Real-time Operations)
- R4. When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (~~Mitigation~~-Time Horizon: Real-time Operations)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, one or more documented Operating Processes, Procedures, or Plans that that will be used to confirm that it has Operating Processes, Procedures or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement 1 and Requirement 2.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice

recordings, or other equivalent evidence that will be used to confirm that it acted or directed others to act in accordance with Requirement 3 and Requirement 4.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Electric Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall keep IROL Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. If an IROL is exceeded for time greater than  $T_v$ , the Reliability Coordinator shall complete and submit to its Compliance Monitor within five days, an IROL Violation Report.

The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances.

**1.4.2** IROL Violation Reports.

### 2. Violation Severity Levels

**2.1. Low:** ~~Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)Not applicable.~~

**2.2. Moderate** ~~Between 85% to 94% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)Not applicable.~~

**2.3.High:** ~~There shall be a high violation severity level if any of the following conditions exist:~~



~~2.4. Between 70% to 84% of the IROLs identified in advance of real time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)~~

~~2.3.2.3. Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4) Not applicable.~~

**2.4. Severe: There shall be a severe violation severity level if any of the following conditions exist:**

**2.4.1** ~~Less than 70% of the~~**One or more** -IROLs identified in advance of real-time **do not** have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

**2.4.2** An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures or Plans were implemented to prevent exceeding that IROL. (R3)

~~2.4.3 Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five<sup>1</sup> minutes or more before taking a control action or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)~~

~~2.4.3.2.4.4~~ **2.4.3.2.4.4** Actual system conditions showed that there was an instance of exceeding an IROL, and no actions or directions were given to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)

**E. Regional Differences**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

Version	Date	Action	Change Tracking

<sup>1</sup> ~~The five minutes is not a ‘grace period’ before taking any action – the five minutes recognizes that the first actions taken may not result in an action that can be independently confirmed.~~

## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
3. SAC approves development of standard (November 20, 2003).
4. JIC assigns development of standard to NERC (January 10, 2003).
5. Drafting team posts drafts for comment (February 18–April 2, 2003) (July 1–August 29, 2003).
6. Balloted December 18, 2003–January 6, 2004.
7. Drafting team posts drafts for comment (March 1–April 14, 2004).
8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007).

### Description of Current Draft:

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team has asked the Standards Committee for authorization to post the standards and implementation plan for a 30-day, pre-ballot review.

### Future Development Plan:

#### Anticipated Actions

1. Post for 30-day pre-ballot period.
2. First ballot of standards.
3. Recirculation ballot of standards.
4. 30-day posting before board adoption.
5. Board adopts standards.

#### Anticipated Date

March 15–April 13, 2007  
April 16–25, 2007  
May 1–10, 2007  
To be determined  
To be determined

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

*None introduced in this standard.*

## A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1.~~First day of first quarter, three months after regulatory approvals.~~

## B. Requirements

- R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (*Violation Risk Factor: MediumLow*) (~~*Mitigation*~~ *Time Horizon: Operations Planning*)
  - R1.1. List of required data and information
  - R1.2. Mutually agreeable format
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.
- R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: MediumLow*) (~~*Mitigation*~~ *Time Horizon: Operations Planning*)

- R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. (*Violation Risk Factor: Medium*) (~~Mitigation~~ *Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, a documented data specification that contains all elements identified in Requirement 1.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.
- M3. The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and provide upon request, evidence that could include but is not limited to, operator logs, voice recordings, computer printouts, SCADA data, or other equivalent evidence that will be used to confirm that it provided data and information, as specified in Requirement 3.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Electric Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall keep its most current data specification.

The Reliability Coordinator shall keep evidence to show compliance with Measure 2

For data that is requested in advance of real-time, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Measure 3 for 3 months.

The Compliance Monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

1.4.1 Data specification(s).

1.4.2 Proof of distribution of the data specification(s).

## 2. Violation Severity Levels for the Reliability Coordinator

### 2.1. Lower: There shall be a lower violation severity level if any of the following conditions exist:

2.1.1 Distributed its data specification to ~~greater than or equal to 95% but less than-99 100%~~ of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.1.2 Provided ~~greater than or equal to 95%- but less then 100% 95-99%~~ of the data and information to other Reliability Coordinators as specified. (R3)

### 2.2. Moderate: There shall be a moderate violation severity level of any of the following conditions exist:

2.2.1 Distributed its data specification to ~~greater than or equal to 85% but less than-9495%~~ of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.2.2 Provided ~~greater than or equal to 85%, but less than 95% 85-94%~~ of the data and information to other Reliability Coordinators as specified. (R3)

### 2.3. High: There shall be a high violation severity level of any of the following conditions exist:

2.3.1 Data specification incomplete (missing one of the following: list of required data, a mutually agreeable format, a timeframe for providing data, a data provision process to use when automated Real-Time system operating data is unavailable). (R1)

2.3.2 Distributed its data specification to ~~greater than or equal to 70%- but less then 85% 70-84%~~ of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.3.3 Provided ~~greater than or equal to 70%- but less then 85% 70-84%~~ of the data and information to other Reliability Coordinators as specified. (R3)

### 2.4. Severe: There shall be a severe violation severity level of any of the following conditions exist:

2.4.1 No data specification (R1)

2.4.2 Data specification distributed to less than 70% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.4.3 Provided less than 70% of the data and information to other Reliability Coordinators as specified. (R3)

## 3. Violation Severity Levels for the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner

- 3.1. **Lower:** Provided greater than or equal to 95%- but less than 100% ~~95-99%~~ of the data and information to the Reliability Coordinator as specified. (R3)
- 3.2. **Moderate:** Provided greater than or equal to 85%, but less than 95% ~~85-94%~~ of the data and information to the Reliability Coordinator as specified. (R3)
- 3.3. **High:** Provided greater than or equal to 70%, but less than 85% ~~70-84%~~ of the data and information to the Reliability Coordinator as specified. (R3)
- 3.4. **Severe:** Provided less than 70% of the data and information to the Reliability Coordinator as specified. (R3)



**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

## A. Introduction

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-~~0~~1
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.

**5. Proposed Effective Date:** ~~April 1, 2005~~ The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1. First day of first quarter, three months after regulatory approvals.

## B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to ~~its Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.

- R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

### C. Measures

- M1. Evidence that the Generator Operator, Transmission Operator, and Balancing Authority, ~~and Reliability Coordinator~~ reported and coordinated scheduled outage information as indicated in the requirements above.

### D. Compliance

#### 1. Compliance Monitoring Process

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

#### 1.1. Compliance Monitoring Responsibility

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

#### 1.2. Compliance Monitoring Period and Reset Timeframe

One calendar year without a violation from the time of the violation.

#### 1.3. Data Retention

One calendar year.

#### 1.4. Additional Compliance Information

Not specified.

#### 2. Levels of Non-Compliance

- 2.1. Level 1:** Each entity responsible for reporting information under Requirements R1 and R3 has a process in place to provide information to their Reliability Coordinator but does not have a process in place (where permitted by legal agreements) to provide this information to the neighboring Balancing Authority or Transmission Operator.
- 2.2. Level 2:** N/A.
- 2.3. Level 3:** N/A.
- 2.4. Level 4:** There is no process in place to exchange outage information, or the entity responsible for reporting information under Requirements R1 to R3 does not follow the directives of the Reliability Coordinator to cancel or reschedule an outage.

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## A. Introduction

1. **Title:** **Operational Reliability Information**
2. **Number:** TOP-005-~~1~~2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - ~~4.3. Reliability Coordinators.~~
  - ~~4.4.3.~~ Purchasing Selling Entities.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1, November 1, 2006~~First day of first quarter, three months after regulatory approvals.~~

## B. Requirements

~~R1. Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.~~

~~R1.1. Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.~~

R2.R1. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”

R3.R2. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.

R4.R3. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

**C. Measures**

- M1. Evidence that the ~~Reliability Coordinator~~, Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

**1.2. Compliance Monitoring Period and Reset Time Frame**

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

Not specified.

**1.4. Additional Compliance Information**

Not specified.

**2. Levels of Non-Compliance**

**2.1. Level 1:** Each entity responsible for reporting information under Requirements R1 to ~~R5-R3~~ is providing the requesting entities with the data required, in specified time intervals and format, but there are problems with consistency of delivery identified in the measuring process that need remedy (e.g., the data is not supplied consistently due to equipment malfunctions, or scaling is incorrect).

**2.2. Level 2:** N/A.

**2.3. Level 3:** N/A.

**2.4. Level 4:** Each entity responsible for reporting information under Requirements R1 to ~~R5-R3~~ is not providing the requesting entities with data with the specified content, timeliness, or format. The information missing is included in the requesting entity’s list of data.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective	Errata

**Standard TOP-005-~~1~~2— Operational Reliability Information**

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		Date	
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## Attachment 1-TOP-005-0

### Electric System Reliability Data

This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.

1. The following information shall be updated at least every ten minutes:
  - 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:
    - 1.1.1 Status.
    - 1.1.2 MW or ampere loadings.
    - 1.1.3 MVA capability.
    - 1.1.4 Transformer tap and phase angle settings.
    - 1.1.5 Key voltages.
  - 1.2. Generator data.
    - 1.2.1 Status.
    - 1.2.2 MW and MVAR capability.
    - 1.2.3 MW and MVAR net output.
    - 1.2.4 Status of automatic voltage control facilities.
  - 1.3. Operating reserve.
    - 1.3.1 MW reserve available within ten minutes.
  - 1.4. Balancing Authority demand.
    - 1.4.1 Instantaneous.
  - 1.5. Interchange.
    - 1.5.1 Instantaneous actual interchange with each Balancing Authority.
    - 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.
    - 1.5.3 Interchange Schedules for the next 24 hours.
  - 1.6. Area Control Error and frequency.
    - 1.6.1 Instantaneous area control error.
    - 1.6.2 Clock hour area control error.
    - 1.6.3 System frequency at one or more locations in the Balancing Authority.
2. Other operating information updated as soon as available.
  - 2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.



- 2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.
- 2.3. Forecast peak demand for current day and next day.
- 2.4. Forecast changes in equipment status.
- 2.5. New facilities in place.
- 2.6. New or degraded special protection systems.
- 2.7. Emergency operating procedures in effect.
- 2.8. Severe weather, fire, or earthquake.
- 2.9. Multi-site sabotage.

## A. Introduction

1. **Title:** Monitoring System Conditions
2. **Number:** TOP-006-~~1~~2
3. **Purpose:**  
To ensure critical reliability parameters are monitored in real-time.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Generator Operators.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1, January 1, 2007~~First day of first quarter, three months after regulatory approvals.~~

## B. Requirements

- R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.
  - R1.1. Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
  - R1.2. Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
- R2. Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.
- R3. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.
- R4. Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.
- R5. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions and to indicate, if appropriate, the need for corrective action.
- R6. Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.

- R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

### C. Measures

- M1. The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3. Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4. Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance monitoring.

##### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### 1.3. Data Retention

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.:

Each Reliability Coordinator, shall have current documents as evidence for Measure 5 and 6.

Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

### 1.4. Additional Compliance Information

None.

## 2. Levels of Non-Compliance for Reliability Coordinators:

2.1. Level 1: Not applicable.

2.2. Level 2: Not applicable.

2.3. Level 3: Not applicable.

2.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

2.4.1 ~~Does not monitor all of the applicable items listed in Requirement 2. Not applicable.~~

2.4.2 ~~Did not have the information specified in R4. Not applicable.~~

2.4.3 Did not bring to the attention of its operators, important deviations in operating conditions and the need for corrective actions. (Requirement 5)

2.4.4 No evidence it monitors system frequency. (Requirement 7)

3. **Levels of Non-Compliance for Generator Operators:**

3.1. **Level 1:** Not applicable.

3.2. **Level 2:** Not applicable.

3.3. **Level 3:** Not applicable.

3.4. **Level 4:** Did not inform its Host Balancing Authority and/or the Transmission Operator of all generation resources available for use. (R1.1)

4. **Levels of Non-Compliance for Transmission Operators and Balancing Authorities:**

4.1. **Level 1:** Not applicable.

4.2. **Level 2:** Not applicable.

4.3. **Level 3:** Not applicable.

4.4. **Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

4.4.1 Did not inform the Reliability Coordinator and/or other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use in accordance with R1.2.

4.4.2 Does not monitor all the applicable items listed in R2.

4.4.3 Did not have the information specified in R4.

4.4.4 Does not have monitoring to bring to the attention of operating personnel important deviations in operating conditions and the need for corrective actions as specified in R5.

4.4.5 No evidence it monitors system frequency. (R7).

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New

**Standard TOP-006-~~1~~2— Monitoring System Conditions**

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0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised

## Standard Development Roadmap

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#### Anticipated Date

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April 16–25, 2007  
May 1–10, 2007  
To be determined  
To be determined

### Definitions of Terms Used in Standard

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**Real-Time Data:** Real-Time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.



## A. Introduction

1. **Title:** **Monitoring the Reliability Coordinator Wide Area**
2. **Number:** IRO-007-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is continuously monitored.
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs). (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations*)
- R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have Real-Time Data for system operating parameters within its Wide Area available in a form that its System Operators can compare to its IROLs as evidence of real-time monitoring.
- M2. For an IROL or its  $T_v$  without agreement between Reliability Coordinators, the Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence to confirm that it used the most conservative of the values under consideration.

## D. Compliance

1. **Compliance Monitoring Process**
  - 1.1. **Compliance Monitoring Responsibility**

Regional Entity
  - 1.2. **Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.
  - 1.3. **Data Retention**

The Reliability Coordinator shall have evidence of compliance with M1 upon request.

The Reliability Coordinator shall keep evidence to show compliance with M2 for three calendar years

The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall demonstrate the following to its Compliance Monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:

**1.4.1** Its System Operators actively monitoring and comparing Real-Time system operating parameters associated with IROLs.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Not applicable.

**2.3. High:** Not applicable.

**2.4. Severe:** A severe violation occurs if either of the following conditions are present:

**2.4.1** System operating parameters not monitored in Real-Time and compared against IROLs.

**2.4.2** There was a disagreement on the IROL or its  $T_v$  and the most conservative limit under consideration was not used.

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

## **Standard Development Roadmap**

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### **Future Development Plan:**

#### **Anticipated Actions**

#### **Anticipated Date**

- |  |                         |
|--|-------------------------|
| 1. Post for 30-day pre-ballot period.    | March 15–April 13, 2007 |
| 2. First ballot of standards.            | April 16–25, 2007       |
| 3. Recirculation ballot of standards.    | May 1–10, 2007          |
| 4. 30-day posting before board adoption. | To be determined        |
| 5. Board adopts standards.               | To be determined        |

### **Definitions of Terms Used in Standard**

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## **A. Introduction**

- 1. Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
- 2. Number:** IRO-008-1
- 3. Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
- 4. Applicability**
  - 4.1.** Reliability Coordinator.
- 5. Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## **B. Requirements.**

- R1.** The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2.** The Reliability Coordinator shall perform Real-Time Assessments at least every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3.** When the results of the Reliability Coordinator's Operational Planning Analyses or Real-Time Assessments indicate the need for specific operational actions to prevent or mitigate instances of exceeding IROLs, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

## **C. Measures**

- M1.** The Reliability Coordinator shall have, and provide upon request, the results of its latest Operational Planning Analysis.
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to computer output, operator logs, checklists, or other evidence to show it conducted a Real-Time Assessment at least once every 30 minutes.
- M3.** The Reliability Coordinator shall have and provide upon request, evidence that could include, but is not limited to operating logs, voice recordings, transcripts of voice records, facsimiles, or other equivalent evidence that will be used to confirm that it shared the results of its Operational Planning Analyses and Real-Time Assessments with those entities expected to take actions based on that information.

## **D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**

Electric Reliability Organization

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.

**1.3. Data Retention**

The Compliance Monitor shall keep audited data for three calendar years.

The Reliability Coordinator shall keep its latest day-ahead Operational Planning Analysis.

The Reliability Coordinator shall keep evidence for M2 for the most recent two days.

The Reliability Coordinator shall keep evidence for M3 for one month.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Shared the results with some but not all of the entities that were required to take action (R3).

**2.3. High:** Real-Time Assessments were conducted but not as frequently as required (R2).

**2.4. Severe:** A severe violation exists if any of the following conditions are present:

**2.4.1** Did not perform an Operational Planning Analysis for the next day in accordance with R1.

**2.4.2** Did not perform any Real-time Assessments for any continuous eight-hour period (R2).

**2.4.3** Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

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**Occurrence Period:** The time period in which performance is measured and evaluated.



## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1.** For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2.** For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shed) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3.** When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4.** When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

## C. Measures

- M1.** The Reliability Coordinator shall have, and provide upon request, one or more documented Operating Processes, Procedures, or Plans that that will be used to confirm that it has Operating Processes, Procedures or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement 1 and Requirement 2.
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice

recordings, or other equivalent evidence that will be used to confirm that it acted or directed others to act in accordance with Requirement 3 and Requirement 4.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Electric Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall keep IROL Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. If an IROL is exceeded for time greater than  $T_v$ , the Reliability Coordinator shall complete and submit to its Compliance Monitor within five days, an IROL Violation Report.

The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances.

**1.4.2** IROL Violation Reports.

### 2. Violation Severity Levels

**2.1. Low:** Not applicable.

**2.2. Moderate** Not applicable.

**2.3. High:** Not applicable.

**2.4. Severe:** **There shall be a severe violation severity level if any of the following conditions exist:**

**2.4.1** One or more IROLs identified in advance of real-time do not have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

- 2.4.2 An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures or Plans were implemented to prevent exceeding that IROL. (R3)
- 2.4.3 Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five<sup>1</sup> minutes or more before taking a control action or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)
- 2.4.4 Actual system conditions showed that there was an instance of exceeding an IROL, and no actions or directions were given to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)

**E. Regional Differences**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

Version	Date	Action	Change Tracking

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<sup>1</sup> The five minutes is not a 'grace period' before taking any action – the five minutes recognizes that the first actions taken may not result in an action that can be independently confirmed.

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*None introduced in this standard.*

## A. Introduction

1. **Title:**           **Reliability Coordinator Data Specification and Collection**
2. **Number:**       IRO-010-1
3. **Purpose:**        To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:**   The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
  - R1.1. List of required data and information
  - R1.2. Mutually agreeable format
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.
- R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and

Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

### **C. Measures**

- M1.** The Reliability Coordinator shall have, and provide upon request, a documented data specification that contains all elements identified in Requirement 1.
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.
- M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and provide upon request, evidence that could include but is not limited to, operator logs, voice recordings, computer printouts, SCADA data, or other equivalent evidence that will be used to confirm that it provided data and information, as specified in Requirement 3.

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Monitoring Responsibility**

Electric Reliability Organization

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.

##### **1.3. Data Retention**

The Reliability Coordinator shall keep its most current data specification.

The Reliability Coordinator shall keep evidence to show compliance with Measure 2

For data that is requested in advance of real-time, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Measure 3 for 3 months.

The Compliance Monitor shall keep audited data for three calendar years.

##### **1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

1.4.1 Data specification(s).

1.4.2 Proof of distribution of the data specification(s).

## 2. Violation Severity Levels for the Reliability Coordinator

**2.1. Lower: There shall be a lower violation severity level if any of the following conditions exist:**

2.1.1 Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.1.2 Provided greater than or equal to 95%- but less than 100% of the data and information to other Reliability Coordinators as specified. (R3)

**2.2. Moderate: There shall be a moderate violation severity level of any of the following conditions exist:**

2.2.1 Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.2.2 Provided greater than or equal to 85%, but less than 95% of the data and information to other Reliability Coordinators as specified. (R3)

**2.3. High: There shall be a high violation severity level of any of the following conditions exist:**

2.3.1 Data specification incomplete (missing one of the following: list of required data, a mutually agreeable format, a timeframe for providing data, a data provision process to use when automated Real-Time system operating data is unavailable). (R1)

2.3.2 Distributed its data specification to greater than or equal to 70%- but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.3.3 Provided greater than or equal to 70%- but less than 85% of the data and information to other Reliability Coordinators as specified. (R3)

**2.4. Severe: There shall be a severe violation severity level of any of the following conditions exist:**

2.4.1 No data specification (R1)

2.4.2 Data specification distributed to less than 70% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)



2.4.3 Provided less than 70% of the data and information to other Reliability Coordinators as specified. (R3)

**3. Violation Severity Levels for the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner**

3.1. **Lower:** Provided greater than or equal to 95%- but less then 100% of the data and information to the Reliability Coordinator as specified. (R3)

3.2. **Moderate:** Provided greater than or equal to 85%, but less than 95% of the data and information to the Reliability Coordinator as specified. (R3)

3.3. **High:** Provided greater than or equal to 70%, but less than 85% of the data and information to the Reliability Coordinator as specified. (R3)

3.4. **Severe:** Provided less than 70% of the data and information to the Reliability Coordinator as specified. (R3)

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

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### Description of Current Draft:

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team has asked the Standards Committee for authorization to post the standards and implementation plan for a 30-day, pre-ballot review.

### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

- |  |                         |
|--|-------------------------|
| 1. Post for 30-day pre-ballot period.    | March 15–April 13, 2007 |
| 2. First ballot of standards.            | April 16–25, 2007       |
| 3. Recirculation ballot of standards.    | May 1–10, 2007          |
| 4. 30-day posting before board adoption. | To be determined        |
| 5. Board adopts standards.               | To be determined        |

### Definitions of Terms Used in Standard

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**Real-Time Data:** Real-Time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.

**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.

**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.

## A. Introduction

1. **Title:** Monitoring the Reliability Coordinator Wide Area
2. **Number:** IRO-007-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is continuously monitored.
4. **Applicability**
  - 4.1. Reliability Coordinator

**B.5. Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements.

- R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs). (*Violation Risk Factor: Medium*) (~~Mitigation~~-Time Horizon: Real-time Operations)
- R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (*Violation Risk Factor: High*) (~~Mitigation~~-Time Horizon: Real-time Operations)

## C. Measures

- M1. The Reliability Coordinator shall have Real-Time Data for system operating parameters within its Wide Area available in a form that its System Operators can compare to its IROLs as evidence of real-time monitoring.
- M2. For an IROL or its  $T_v$  without agreement between Reliability Coordinators, the Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence to confirm that it used the most conservative of the values under consideration.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

~~Electric Reliability Organization Regional Entity~~

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall have evidence of compliance with M1 upon request.

The Reliability Coordinator shall keep evidence to show compliance with M2 for three calendar years

The Compliance Monitor shall keep audited data for three calendar years.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall demonstrate the following to its Compliance Monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:

**1.4.1** Its System Operators actively monitoring and comparing Real-Time system operating parameters associated with IROLs.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Not applicable.

**2.3. High:** Not applicable.

**2.4. Severe:** A severe violation occurs if either of the following conditions are present:

**2.4.1** System operating parameters not monitored in Real-Time and compared against IROLs.

**2.4.2** There was a disagreement on the IROL or its  $T_v$  and the most conservative limit under consideration was not used.

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

## Standard Development Roadmap

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2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
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### Description of Current Draft:

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### Future Development Plan:

#### Anticipated Actions

1. Post for 30-day pre-ballot period.
2. First ballot of standards.
3. Recirculation ballot of standards.
4. 30-day posting before board adoption.
5. Board adopts standards.

#### Anticipated Date

March 15–April 13, 2007  
April 16–25, 2007  
May 1–10, 2007  
To be determined  
To be determined

### **Definitions of Terms Used in Standard**

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## A. Introduction

1. **Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (~~Mitigation-Time Horizon: Operations Planning~~)
- R2. The Reliability Coordinator shall perform Real-Time Assessments at least every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (~~Mitigation-Time Horizon: Real-time Operations~~)
- R3. When the results of the Reliability Coordinator's Operational Planning Analyses or Real-Time Assessments indicate the need for specific operational actions to prevent or mitigate instances of exceeding IROLs, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (~~Mitigation-Time Horizon: Real-time Operations or Same Day Operations~~)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, the results of its latest Operational Planning Analysis.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to computer output, operator logs, checklists, or other evidence to show it conducted a Real-Time Assessment at least once every 30 minutes.
- M3. The Reliability Coordinator shall have and provide upon request, evidence that could include, but is not limited to operating logs, voice recordings, transcripts of voice records, facsimiles, or other equivalent evidence that will be used to confirm that it shared the results of its Operational Planning Analyses and Real-Time Assessments with those entities expected to take actions based on that information.

## D. Compliance

1. **Compliance Monitoring Process**



**1.1. Compliance Monitoring Responsibility**

Electric Reliability Organization

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Performance-Reset Period shall be 12 months from the last violation.

**1.3. Data Retention**

The Compliance Monitor shall keep audited data for three calendar years.

The Reliability Coordinator shall keep its latest day-ahead Operational Planning Analysis.

The Reliability Coordinator shall keep evidence for M2 for the most recent two days.

The Reliability Coordinator shall keep evidence for M3 for one month.

**1.4. Additional Compliance Information**

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

**2. Violation Severity Levels**

**2.1. Lower:** Not applicable.

**2.2. Moderate:** Shared the results with some but not all of the entities that were required to take action (R3).

**2.3. High:** Real-Time Assessments were conducted but not as frequently as required (R2).

**2.4. Severe:** A severe violation exists if any of the following conditions are present:

**2.4.1** Did not perform an Operational Planning Analysis for the next day in accordance with R1.

**2.4.2** Did not perform any Real-time Assessments for any continuous eight-hour period (R2).

**2.4.3** Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

## Standard Development Roadmap

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### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

- |  |                         |
|--|-------------------------|
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### Definitions of Terms Used in Standard

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~~**Interconnection Reliability Operating Limit Event:** Any instance of exceeding an Interconnection Reliability Operating Limit for a minimum of 30 continuous seconds.~~

~~**Interconnection Reliability Operating Limit Event Duration:** The length of time an Interconnection Reliability Operating Limit is exceeded. The duration is measured from the point in time where the limit is first exceeded for at least 30 continuous seconds and ends at the beginning of the continuous 30 seconds in which the value returns to within the Interconnection Reliability Operating Limit.~~

**Occurrence Period:** The time period in which performance is measured and evaluated.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Coordinator
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1.

## B. Requirements

- R1. For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (~~Mitigation~~-Time Horizon: Operations Planning or Same Day Operations)
- R2. For each IROL that is identified in advance of Real-time, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shed) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (~~Mitigation~~-Time Horizon: Operations Planning or Same Day Operations)
- R3. When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL. (*Violation Risk Factor: High*) (~~Mitigation~~-Time Horizon: Real-time Operations)
- R4. When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (~~Mitigation~~-Time Horizon: Real-time Operations)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, one or more documented Operating Processes, Procedures, or Plans that that will be used to confirm that it has Operating Processes, Procedures or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement 1 and Requirement 2.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice

recordings, or other equivalent evidence that will be used to confirm that it acted or directed others to act in accordance with Requirement 3 and Requirement 4.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Electric Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall keep IROL Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. If an IROL is exceeded for time greater than  $T_v$ , the Reliability Coordinator shall complete and submit to its Compliance Monitor within five days, an IROL Violation Report.

The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances.

**1.4.2** IROL Violation Reports.

### 2. Violation Severity Levels

**2.1. Low:** ~~Between 95% to 99% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)Not applicable.~~

**2.2. Moderate** ~~Between 85% to 94% of the IROLs identified in advance of real-time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)Not applicable.~~

**2.3.High:** ~~There shall be a high violation severity level if any of the following conditions exist:~~

~~2.4. Between 70% to 84% of the IROLs identified in advance of real time have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)~~

~~2.3.2.3. Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4) Not applicable.~~

**2.4. Severe: There shall be a severe violation severity level if any of the following conditions exist:**

**2.4.1** ~~Less than 70% of the~~One or more -IROLs identified in advance of real-time do not have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)

**2.4.2** An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures or Plans were implemented to prevent exceeding that IROL. (R3)

**2.4.3** Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five<sup>1</sup> minutes or more before taking a control action or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)

~~**2.4.3.2.4.4** Actual system conditions showed that there was an instance of exceeding an IROL, and no actions or directions were given to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)~~

**E. Regional Differences**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

Version	Date	Action	Change Tracking

<sup>1</sup> The five minutes is not a ‘grace period’ before taking any action – the five minutes recognizes that the first actions taken may not result in an action that can be independently confirmed.

## Standard Development Roadmap

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#### Anticipated Actions

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#### Anticipated Date

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April 16–25, 2007  
May 1–10, 2007  
To be determined  
To be determined



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*None introduced in this standard.*

## A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:** The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1.~~First day of first quarter, three months after regulatory approvals.~~

## B. Requirements

- R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (*Violation Risk Factor: MediumLow*) (~~*Mitigation*~~ *Time Horizon: Operations Planning*)
  - R1.1. List of required data and information
  - R1.2. Mutually agreeable format
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.
- R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: MediumLow*) (~~*Mitigation*~~ *Time Horizon: Operations Planning*)

- R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. (*Violation Risk Factor: Medium*) (~~Mitigation~~ *Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, a documented data specification that contains all elements identified in Requirement 1.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.
- M3. The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and provide upon request, evidence that could include but is not limited to, operator logs, voice recordings, computer printouts, SCADA data, or other equivalent evidence that will be used to confirm that it provided data and information, as specified in Requirement 3.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Electric Reliability Organization

#### 1.2. Compliance Monitoring Period and Reset Time Frame

The Performance-Reset Period shall be 12 months from the last violation.

#### 1.3. Data Retention

The Reliability Coordinator shall keep its most current data specification.

The Reliability Coordinator shall keep evidence to show compliance with Measure 2

For data that is requested in advance of real-time, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Measure 3 for 3 months.

The Compliance Monitor shall keep audited data for three calendar years.

#### 1.4. Additional Compliance Information

The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.

The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:

1.4.1 Data specification(s).

1.4.2 Proof of distribution of the data specification(s).

## 2. Violation Severity Levels for the Reliability Coordinator

### 2.1. Lower: There shall be a lower violation severity level if any of the following conditions exist:

2.1.1 Distributed its data specification to ~~greater than or equal to 95% but less than-99 100%~~ of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.1.2 Provided ~~greater than or equal to 95%- but less then 100% 95-99%~~ of the data and information to other Reliability Coordinators as specified. (R3)

### 2.2. Moderate: There shall be a moderate violation severity level of any of the following conditions exist:

2.2.1 Distributed its data specification to ~~greater than or equal to 85% but less than-9495%~~ of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.2.2 Provided ~~greater than or equal to 85%, but less than 95% 85-94%~~ of the data and information to other Reliability Coordinators as specified. (R3)

### 2.3. High: There shall be a high violation severity level of any of the following conditions exist:

2.3.1 Data specification incomplete (missing one of the following: list of required data, a mutually agreeable format, a timeframe for providing data, a data provision process to use when automated Real-Time system operating data is unavailable). (R1)

2.3.2 Distributed its data specification to ~~greater than or equal to 70%- but less then 85% 70-84%~~ of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.3.3 Provided ~~greater than or equal to 70%- but less then 85% 70-84%~~ of the data and information to other Reliability Coordinators as specified. (R3)

### 2.4. Severe: There shall be a severe violation severity level of any of the following conditions exist:

2.4.1 No data specification (R1)

2.4.2 Data specification distributed to less than 70% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)

2.4.3 Provided less than 70% of the data and information to other Reliability Coordinators as specified. (R3)

## 3. Violation Severity Levels for the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner

- 3.1. **Lower:** Provided greater than or equal to 95%- but less than 100% ~~95-99%~~ of the data and information to the Reliability Coordinator as specified. (R3)
- 3.2. **Moderate:** Provided greater than or equal to 85%, but less than 95% ~~85-94%~~ of the data and information to the Reliability Coordinator as specified. (R3)
- 3.3. **High:** Provided greater than or equal to 70%, but less than 85% ~~70-84%~~ of the data and information to the Reliability Coordinator as specified. (R3)
- 3.4. **Severe:** Provided less than 70% of the data and information to the Reliability Coordinator as specified. (R3)

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking

March 22, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement: Pre-ballot Window and Ballot Pool Open March 22, 2007**

The Standards Committee (SC) announces the following standards actions:

**Pre-ballot Window and Ballot Pool for Interconnection Reliability Operating Limit Standards Open March 22, 2007**

The following [Operate within Interconnection Reliability Operating Limit](#) standards are posted for a 30-day pre-ballot review:

- IRO-007-1 — Monitoring the Reliability Coordinator Wide Area
- IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009-1 — Reliability Coordinator Actions to Operate Within IROs
- IRO-010-1 — Reliability Coordinator Data Specification and Collection

This set of Version 1 standards requires the Reliability Coordinator to monitor its wide area, to have plans in place to prevent and mitigate instances of exceeding IROs, to direct actions in support of operating within IROs, and to specify and collect reliability-related data needed to prevent instability, uncontrolled separation or cascading outages.

The ballot for the above set of standards also includes the Interconnection Reliability Operating Limits [Implementation Plan](#).

A new [ballot pool](#) to vote on this set of standards has been formed and will remain open up until 8 a.m. (EDT) Monday, April 23, 2007. During the pre-ballot window, members of the ballot pool may communicate with one another by using their "ballot pool list server." The list server for this ballot pool is called: [bp-IROL\\_in@nerc.com](mailto:bp-IROL_in@nerc.com)

The initial ballot for this set of standards will be conducted from 8 a.m. (EDT) on Monday, April 23 through 8 p.m. (EDT) Friday, May 4, 2007.

**Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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### **Prerequisite Approvals**

Reliability Standard FAC-014-1 — Establish and Communicate System Operating Limits, needs to be approved by applicable regulatory authorities before this set of standards becomes effective:

IRO-007 — Monitoring the Wide Area

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

### **Conforming Changes to Requirements in Already Approved Standards**

Many elements contained in the set of proposed ‘Operate within IROL Standards’ address the same or similar performance objectives as requirements in already approved standards. To eliminate duplication and minimize confusion, the following requirements in Version 0 Standards should be revised or retired when the proposed standards are implemented. Justification for these revisions and retirements is provided in the tables on the following pages.

EOP-001-0 — Emergency Operations Planning

- Retire R2

IRO-002-1 — Reliability Coordination – Facilities

- Retire R2 and R6

IRO-003-2 — Reliability Coordination – Wide Area View

- Retire entire standard (R1 and R2)

IRO-004-1 — Reliability Coordination – Operations Planning

- Retire entire standard (R1 through R6)

IRO-005-2 — Reliability Coordination – Current Day Operations

- Retire R1, convert most of R1 into a reference; retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination

- Modify R1.2

TOP-005-1 — Operational Reliability Information

- Retire R1 and R1.1
- Convert Attachment 1 into a reference

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control

- Modify R2 and R4

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Revisions or Retirements to Already Approved Standards**

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>EOP-001-0</b></p> <p><b>R2.</b> The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.</p>	<p><b>IRO-009-1 R1.</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.</li> <li>▪ The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's <math>T_v</math>, which can be shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-002-1</b></p> <p><b>R2.</b> Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall specify and collect the data and information it needs to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. The Reliability Coordinator shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Coordinator, and from entities that provide Real-Time Facility status to the Reliability Coordinator. This includes specifying and collecting data from the following:</p> <ul style="list-style-type: none"> <li>R1.1 Balancing Authorities</li> <li>R1.2 Generator Owners</li> <li>R1.3 Generator Operators</li> <li>R1.4 Interchange Authority</li> <li>R1.5 Load-Serving Entities</li> <li>R1.6 Reliability Coordinators</li> <li>R1.7 Transmission Operators</li> <li>R1.8 Transmission Owners</li> </ul>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-002-1 R2 should be retired.</li> <li>▪ IRO-010-1 R1 requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed requirement is more explicit than the associated requirement in IRO-002-0.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-002-1</b></p> <p>R6. Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.</p>	<p><b>IRO-007-1</b></p> <p>R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 becomes effective, IRO-002-1 R6 should be retired.</li> <li>▪ IRO-002-1 R6 identifies some, but not all of the parameters to be monitored by the Reliability Coordinator and can be misleading. A list of elements to be monitored (from IRO-005-2) has been converted into a Technical Reference.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-003-2</b></p> <p><b>R1.</b> Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.</p> <p><b>R2.</b> Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.</p>	<p><b>IRO-007-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 becomes effective, IRO-003-2 should be retired.</li> <li>▪ The Transmission Operator, not the Reliability Coordinator, is responsible for operating within System Operating Limits. The Reliability Coordinator is responsible for operating within IROLs.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p><b>R2.</b> Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p>	<p><b>IRO-008-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-004-1 R1 and R2 should be retired.</li> <li>▪ IRO-008 R1 requires the Reliability Coordinator to look at its 'Wide Area' rather than its 'Reliability Coordinator Area' in conducting its Operational Planning Analyses.</li> <li>▪ IRO-004-1 R2 is not measurable and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008 becomes effective.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R3.</b> Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.</p> <p><b>R6.</b> If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within Tv up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.</li> <li>▪ IRO-009-1 R1 requires the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>▪ IRO-009-1 R2 includes language that is more explicit than the language in IRO-004-1 R6: ‘results of these studies’ is not as specific as ‘when an assessment of actual or expected system conditions’.</li> </ul>	



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R4.</b> Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.</p> <p><b>R5.</b> Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.</p> <p><b>IRO-005-2</b></p> <p><b>R2.</b> Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <p><b>R1.1.</b> List of required data and information</p> <p><b>R1.2.</b> Mutually agreeable format</p> <p><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</p> <p><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-004-1 R4 and R5 should be retired.</li> <li>▪ IRO-010-1 is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share. The periodicity for collecting the data is addressed in IRO-010-1 R1.3. Only a fraction of the reliability-related data needed by the Reliability Coordinator and shared by the Reliability Coordinator is addressed in IRO-004-1 R4 and R5.</li> <li>▪ When IRO-010-1 becomes effective, IRO-005-2 R2 should be retired. The e-tag system replaced the need for this requirement. In addition, if the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R1.</b> Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:</p> <ul style="list-style-type: none"> <li><b>R1.1</b> Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.</li> <li><b>R1.2</b> Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.</li> <li><b>R1.3</b> Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.</li> <li><b>R1.4</b> System real and reactive reserves (actual versus required).</li> <li><b>R1.5</b> Capacity and energy adequacy conditions.</li> <li><b>R1.6</b> Current ACE for all its Balancing Authorities.</li> <li><b>R1.7</b> Current local or Transmission Loading Relief procedures in effect.</li> <li><b>R1.8</b> Planned generation dispatches.</li> <li><b>R1.9</b> Planned transmission or generation outages.</li> <li><b>R1.10</b> Contingency events.</li> </ul>	<p><b>IRO-007-1</b>  <b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-005-2 R1 should be retired and R1.1 through R1.10 should be converted into a Technical Reference. IRO-005-2 R1 is duplicated with IRO-007-1 R1. The list of parameters to monitor (IRO-005 -2 R1.1 through R1.10) does not identify all parameters to monitor and can be misleading.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R3.</b> As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.</p> <p><b>R5.</b> Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.</p>	<p><b>IRO-009-1</b>  <b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R3, and R5 should be retired.</li> <li>▪ IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a <math>T_v</math> that is much shorter than 30 minutes.</li> <li>▪ IRO-005 R5 can lead the Compliance Monitor to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b></p> <p><b>R9.</b> The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R9 should be modified.</li> <li>▪ IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R13.</b> Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.</p>	<p><b>IRO-009-1</b>  <b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.  <b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.  <b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p> <p><b>IRO-007-1</b>  <b>R2.</b> If unanimity cannot be reached on the value for an IROL or its <math>T_v</math>, all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 and IRO-009-1 become effective, IRO-005-2 R13 should be retired.</li> <li>▪ IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.</li> <li>▪ The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-007-1 R2 has a similar requirement that is applicable totally to the Reliability Coordinator.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R14.</b> Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view. The Transmission Service Providers shall respect <del>these</del> SOLs <del>or</del> and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p><b>R16.</b> Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p><b>R17.</b> When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>	<p><b>IRO-009-1</b></p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.</li> <li>▪ IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROLs – R14 implies that the Transmission Service Provider may respect ‘either’ SOLs or IROLs.</li> <li>▪ IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>▪ IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a T<sub>v</sub> that is much shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-003-0</b></p> <p><b>R1.</b> Generator Operators and Transmission Operators shall provide planned outage information.</p> <p><b>R1.1</b> Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p><b>R1.2</b> Each Transmission Operator shall provide outage information daily to <del>its Reliability Coordinator, and to</del> affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. <del>The Reliability Coordinator shall establish the outage reporting requirements.</del></p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <p><b>R1.1.</b> List of required data and information</p> <p><b>R1.2.</b> Mutually agreeable format</p> <p><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</p> <p><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-003-0 R1.2 should be modified.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to provide data to other Reliability Coordinators in accordance with the data specifications it has received from those other Reliability Coordinators. Daily outage data is one of the types of data that is expected to be identified on the Reliability Coordinator’s documented data specification since this is data needed to maintain real-time models.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-005-1</b>  <b>R1.</b> Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</p> <p><b>R1.1</b> Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <p><b>R1.1.</b> List of required data and information  <b>R1.2.</b> Mutually agreeable format  <b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)  <b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments..</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-005-1 R1 and R1.1 should be retired.</li> <li>▪ Under IRO-010-1 each Reliability Coordinator must document what data and information it needs and entities must provide that data. The data needed by the Reliability Coordinator is needed for more than just reliability assessments – some of the data is used for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in R1 of TOP-005-1) have data and information needed by the Reliability Coordinator.</li> </ul>	



Version 0 Standards	Proposed Replacement
<p><b>TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data</b></p> <p>This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.</p> <ol style="list-style-type: none"> <li>1. The following information shall be updated at least every ten minutes:               <ol style="list-style-type: none"> <li>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:                   <ol style="list-style-type: none"> <li>1.1.1 Status.</li> <li>1.1.2 MW or ampere loadings.</li> <li>1.1.3 MVA capability.</li> <li>1.1.4 Transformer tap and phase angle settings.</li> <li>1.1.5 Key voltages.</li> </ol> </li> <li>1.2. Generator data.                   <ol style="list-style-type: none"> <li>1.2.1 Status.</li> <li>1.2.2 MW and MVAR capability.</li> <li>1.2.3 MW and MVAR net output.</li> <li>1.2.4 Status of automatic voltage control facilities.</li> </ol> </li> <li>1.3. Operating reserve.                   <ol style="list-style-type: none"> <li>1.3.1 MW reserve available within ten minutes.</li> </ol> </li> <li>1.4. Balancing Authority demand.                   <ol style="list-style-type: none"> <li>1.4.1 Instantaneous.</li> </ol> </li> <li>1.5. Interchange.                   <ol style="list-style-type: none"> <li>1.5.1 Instantaneous actual interchange with each Balancing Authority.</li> <li>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</li> <li>1.5.3 Interchange Schedules for the next 24 hours.</li> </ol> </li> <li>1.6. Area Control Error and frequency.                   <ol style="list-style-type: none"> <li>1.6.1 Instantaneous area control error.</li> <li>1.6.2 Clock hour area control error.</li> <li>1.6.3 System frequency at one or more locations in the Balancing Authority.</li> </ol> </li> </ol> </li> <li>2. Other operating information updated as soon as available.               <ol style="list-style-type: none"> <li>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</li> <li>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</li> <li>2.3. Forecast peak demand for current day and next day.</li> <li>2.4. Forecast changes in equipment status.</li> <li>2.5. New facilities in place.</li> <li>2.6. New or degraded special protection systems.</li> <li>2.7. Emergency operating procedures in effect.</li> <li>2.8. Severe weather, fire, or earthquake.</li> <li>2.9. Multi-site sabotage.</li> </ol> </li> </ol>	<p>New Technical Reference</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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**Notes:**

- When IRO-010-1 becomes effective, 'Attachment 1-TOP-005-0 Electric System Reliability Data' should be translated into a Technical Reference. This data is only a partial list of data and information that the Reliability Coordinator needs to support reliable operations.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-006-1</b></p> <p><b>R2.</b> Each <a href="#">Reliability Coordinator</a>, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.</p> <p><b>R4.</b> Each <a href="#">Reliability Coordinator</a>, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system’s near-term load pattern.</p>	<p><b>IRO-007-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p> <p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information</li> <li><b>R1.2.</b> Mutually agreeable format</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 and IRO-010-1 become effective, TOP-006-1 R2 and R4 should be modified.</li> <li>▪ The Reliability Coordinator’s monitoring requirements are addressed more globally in IRO-007-1. The Reliability Coordinator may not have access to all the transmission data identified in TOP-006-1 R2.</li> <li>▪ The information identified in TOP-006-1 R4 is not inclusive, and is addressed more globally in IRO-010-1 R1 and R3.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Functions that Must Comply with the Requirements in the Standards**

Standard	Functions that Must Comply With the Requirements							
	Reliability Coordinator	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
IRO-007-1 Monitoring the Wide Area	X							
IRO-008-1 Analyses & Assessments	X							
IRO-009-1 Actions to Operate within IROLs	X							
IRO-010-1 Data Specification & Collection	X	X	X	X	X	X	X	X

**Effective Dates**

The standards should all become effective the latter of the first day of the first quarter, three months after regulatory approvals **or** coincident with the effective date for FAC-014-1 — Establish and Communicate System Operating Limits.

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Prerequisite Approvals

~~Reliability Standard FAC-014-1 — Establish and Communicate System Operating Limits, needs to be approved. There are no SARs or standards in progress that need to be approved by applicable regulatory authorities~~ before this set of standards ~~can become approved effective~~:

IRO-007 — Monitoring the Wide Area

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

### Conforming Changes to Requirements in Already Approved Standards

Many elements contained in the set of proposed ‘Operate within IROL Standards’ address the same or similar performance objectives as requirements in already approved standards. To eliminate duplication and minimize confusion, the following requirements in Version 0 Standards should be revised or retired when the proposed standards are implemented. Justification for these revisions and retirements is provided in the tables on the following pages.

EOP-001-0 — Emergency Operations Planning

- Retire R2

IRO-002-1 — Reliability Coordination – Facilities

- Retire R2 and R6

IRO-003-2 — Reliability Coordination – Wide Area View

- Retire entire standard (R1 and R2)

IRO-004-1 — Reliability Coordination – Operations Planning

- Retire entire standard (R1 through R6)

IRO-005-2 — Reliability Coordination – Current Day Operations

- Retire R1, convert most of R1 into a reference; retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination

- Modify R1.2

TOP-005-1 — Operational Reliability Information

- Retire R1 and R1.1
- Convert Attachment 1 into a reference

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control

- Modify R2 and R4

**Revisions or Retirements to Already Approved Standards**

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>EOP-001-0</b></p> <p><b>R2.</b> The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.</p>	<p><b>IRO-009-1 R1.</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.</li> <li>▪ The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's <math>T_v</math>, which can be shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-002-1</b></p> <p><b>R2.</b> Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall specify and collect the data and information it needs to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. The Reliability Coordinator shall collect this data from the entities performing functions that have Facilities monitored by the Reliability Coordinator, and from entities that provide Real-Time Facility status to the Reliability Coordinator. This includes specifying and collecting data from the following:</p> <ul style="list-style-type: none"> <li>R1.1 Balancing Authorities</li> <li>R1.2 Generator Owners</li> <li>R1.3 Generator Operators</li> <li>R1.4 Interchange Authority</li> <li>R1.5 Load-Serving Entities</li> <li>R1.6 Reliability Coordinators</li> <li>R1.7 Transmission Operators</li> <li>R1.8 Transmission Owners</li> </ul>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-002-1 R2 should be retired.</li> <li>▪ IRO-010-1 R1 requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed requirement is more explicit than the associated requirement in IRO-002-0.</li> </ul>	



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-002-1</b></p> <p>R6. Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.</p>	<p><b>IRO-007-1</b></p> <p>R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 becomes effective, IRO-002-1 R6 should be retired.</li> <li>▪ IRO-002-1 R6 identifies some, but not all of the parameters to be monitored by the Reliability Coordinator and can be misleading. A list of elements to be monitored (from IRO-005-2) has been converted into a Technical Reference.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-003-2</b></p> <p><b>R1.</b> Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.</p> <p><b>R2.</b> Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.</p>	<p><b>IRO-007-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 becomes effective, IRO-003-2 should be retired.</li> <li>▪ The Transmission Operator, not the Reliability Coordinator, is responsible for operating within System Operating Limits. The Reliability Coordinator is responsible for operating within IROLs.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p><b>R2.</b> Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p>	<p><b>IRO-008-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-004-1 R1 and R2 should be retired.</li> <li>▪ IRO-008 R1 requires the Reliability Coordinator to look at its 'Wide Area' rather than its 'Reliability Coordinator Area' in conducting its Operational Planning Analyses.</li> <li>▪ IRO-004-1 R2 is not measurable and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008, <del>IRO-009, and IRO-010</del> becomes effective.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R3.</b> Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROs.</p> <p><b>R6.</b> If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROs and mitigation of instances of exceeding its IROs within Tv up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.</li> <li>▪ IRO-009-1 R1 requires the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROs – under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>▪ IRO-009-1 R2 includes language that is more explicit than the language in IRO-004-1 R6: ‘results of these studies’ is not as specific as ‘when an assessment of actual or expected system conditions’.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-004-1</b></p> <p><b>R4.</b> Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.</p> <p><b>R5.</b> Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.</p> <p><b>IRO-005-2</b></p> <p><b>R2.</b> Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <p><b>R1.1.</b> List of required data and information</p> <p><b>R1.2.</b> Mutually agreeable format</p> <p><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</p> <p><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-004-1 R4 and R5 should be retired.</li> <li>▪ IRO-010-1 is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share. The periodicity for collecting the data is addressed in IRO-010-1 R1.3. Only a fraction of the reliability-related data needed by the Reliability Coordinator and shared by the Reliability Coordinator is addressed in IRO-004-1 R4 and R5.</li> <li>▪ When IRO-010-1 becomes effective, IRO-005-2 R2 should be retired. The e-tag system replaced the need for this requirement. In addition, if the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R1.</b> Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:</p> <ul style="list-style-type: none"> <li><b>R1.1</b> Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.</li> <li><b>R1.2</b> Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.</li> <li><b>R1.3</b> Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.</li> <li><b>R1.4</b> System real and reactive reserves (actual versus required).</li> <li><b>R1.5</b> Capacity and energy adequacy conditions.</li> <li><b>R1.6</b> Current ACE for all its Balancing Authorities.</li> <li><b>R1.7</b> Current local or Transmission Loading Relief procedures in effect.</li> <li><b>R1.8</b> Planned generation dispatches.</li> <li><b>R1.9</b> Planned transmission or generation outages.</li> <li><b>R1.10</b> Contingency events.</li> </ul>	<p><b>IRO-007-1</b>  <b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-005-2 R1 should be retired and R1.1 through R1.10 should be converted into a Technical Reference. IRO-005-2 R1 is duplicated with IRO-007-1 R1. The list of parameters to monitor (IRO-005 -2 R1.1 through R1.10) does not identify all parameters to monitor and can be misleading.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R3.</b> As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.</p> <p><b>R5.</b> Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.</p>	<p><b>IRO-009-1</b>  <b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R3, and R5 should be retired.</li> <li>▪ IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a <math>T_v</math> that is much shorter than 30 minutes.</li> <li>▪ IRO-005 R5 can lead the Compliance Monitor to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator’s area has a System Operating Limit, but the Reliability Coordinator isn’t required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b></p> <p><b>R9.</b> The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.</p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R9 should be modified.</li> <li>▪ IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 <del>focuses</del> includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul>	



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R13.</b> Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.</p>	<p><b>IRO-009-1</b>  <b>R1.</b> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within <math>T_v</math> up to and including load shed.  <b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.  <b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p> <p><b>IRO-007-1</b>  <b>R2.</b> If unanimity cannot be reached on the value for an IROL or its <math>T_v</math>, all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 and IRO-009-1 become effective, IRO-005-2 R13 should be retired.</li> <li>▪ IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.</li> <li>▪ The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-007-1 R2 has a similar requirement that is applicable totally to the Reliability Coordinator.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement Requirement(s)
<p><b>IRO-005-2</b>  <b>R14.</b> Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view. The Transmission Service Providers shall respect <del>these</del> SOLs <del>or</del> and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p><b>R16.</b> Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p><b>R17.</b> When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>	<p><b>IRO-009-1</b></p> <p><b>R2.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL.</p> <p><b>R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.</li> <li>▪ IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROLs – R14 implies that the Transmission Service Provider may respect ‘either’ SOLs or IROLs.</li> <li>▪ IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>▪ IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a T<sub>v</sub> that is much shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-003-0</b></p> <p><b>R1.</b> Generator Operators and Transmission Operators shall provide planned outage information.</p> <p><b>R1.1</b> Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p><b>R1.2</b> Each Transmission Operator shall provide outage information daily to <del>its Reliability Coordinator, and to</del> affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. <del>The Reliability Coordinator shall establish the outage reporting requirements.</del></p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <p><b>R1.1.</b> List of required data and information</p> <p><b>R1.2.</b> Mutually agreeable format</p> <p><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</p> <p><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-003-0 R1.2 should be modified.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to provide data to other Reliability Coordinators in accordance with the data specifications it has received from those other Reliability Coordinators. Daily outage data is one of the types of data that is expected to be identified on the Reliability Coordinator’s documented data specification since this is data needed to maintain real-time models.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-005-1</b>  <b>R1.</b> Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</p> <p><b>R1.1</b> Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <p><b>R1.1.</b> List of required data and information  <b>R1.2.</b> Mutually agreeable format  <b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)  <b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments..</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-005-1 R1 and R1.1 should be retired.</li> <li>▪ Under IRO-010-1 each Reliability Coordinator must document what data and information it needs and entities must provide that data. The data needed by the Reliability Coordinator is needed for more than just reliability assessments – some of the data is used for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in R1 of TOP-005-1) have data and information needed by the Reliability Coordinator.</li> </ul>	

Version 0 Standards	Proposed Replacement
<p><b>TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data</b></p> <p>This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.</p> <ol style="list-style-type: none"> <li>1. The following information shall be updated at least every ten minutes:               <ol style="list-style-type: none"> <li>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:                   <ol style="list-style-type: none"> <li>1.1.1 Status.</li> <li>1.1.2 MW or ampere loadings.</li> <li>1.1.3 MVA capability.</li> <li>1.1.4 Transformer tap and phase angle settings.</li> <li>1.1.5 Key voltages.</li> </ol> </li> <li>1.2. Generator data.                   <ol style="list-style-type: none"> <li>1.2.1 Status.</li> <li>1.2.2 MW and MVAR capability.</li> <li>1.2.3 MW and MVAR net output.</li> <li>1.2.4 Status of automatic voltage control facilities.</li> </ol> </li> <li>1.3. Operating reserve.                   <ol style="list-style-type: none"> <li>1.3.1 MW reserve available within ten minutes.</li> </ol> </li> <li>1.4. Balancing Authority demand.                   <ol style="list-style-type: none"> <li>1.4.1 Instantaneous.</li> </ol> </li> <li>1.5. Interchange.                   <ol style="list-style-type: none"> <li>1.5.1 Instantaneous actual interchange with each Balancing Authority.</li> <li>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</li> <li>1.5.3 Interchange Schedules for the next 24 hours.</li> </ol> </li> <li>1.6. Area Control Error and frequency.                   <ol style="list-style-type: none"> <li>1.6.1 Instantaneous area control error.</li> <li>1.6.2 Clock hour area control error.</li> <li>1.6.3 System frequency at one or more locations in the Balancing Authority.</li> </ol> </li> </ol> </li> <li>2. Other operating information updated as soon as available.               <ol style="list-style-type: none"> <li>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</li> <li>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</li> <li>2.3. Forecast peak demand for current day and next day.</li> <li>2.4. Forecast changes in equipment status.</li> <li>2.5. New facilities in place.</li> <li>2.6. New or degraded special protection systems.</li> <li>2.7. Emergency operating procedures in effect.</li> <li>2.8. Severe weather, fire, or earthquake.</li> <li>2.9. Multi-site sabotage.</li> </ol> </li> </ol>	<p>New Technical Reference</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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**Notes:**

- When IRO-010-1 becomes effective, 'Attachment 1-TOP-005-0 Electric System Reliability Data' should be translated into a Technical Reference. This data is only a partial list of data and information that the Reliability Coordinator needs to support reliable operations.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-006-1</b></p> <p><b>R2.</b> Each <a href="#">Reliability Coordinator</a>, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.</p> <p><b>R4.</b> Each <a href="#">Reliability Coordinator</a>, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system’s near-term load pattern.</p>	<p><b>IRO-007-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</p> <p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information</li> <li><b>R1.2.</b> Mutually agreeable format</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-007-1 and IRO-010-1 become effective, TOP-006-1 R2 and R4 should be modified.</li> <li>▪ The Reliability Coordinator’s monitoring requirements are addressed more globally in IRO-007-1. The Reliability Coordinator may not have access to all the transmission data identified in TOP-006-1 R2.</li> <li>▪ The information identified in TOP-006-1 R4 is not inclusive, and is addressed more globally in IRO-010-1 R1 and R3.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

**Functions that Must Comply with the Requirements in the Standards**

Standard	Functions that Must Comply With the Requirements							
	Reliability Coordinator	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
IRO-007-1 Monitoring the Wide Area	X							
IRO-008-1 Analyses & Assessments	X							
IRO-009-1 Actions to Operate within IROLs	X							
IRO-010-1 Data Specification & Collection	X	X	X	X	X	X	X	X

**Effective Dates**

The standards should all become effective the latter of ~~on~~ the first day of the first quarter, three months after regulatory approvals or ~~;~~ coincident with the effective date for FAC-014-1 — Establish and Communicate System Operating Limits.



### A. Introduction

1. **Title:**        **Emergency Operations Planning**
2. **Number:**    EOP-001-0
3. **Purpose:**     Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Dates:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

### B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- R2. Deleted
- R3. Each Transmission Operator and Balancing Authority shall:
  - R3.1. Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R3.2. Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R3.3. Develop, maintain, and implement a set of plans for load shedding.
  - R3.4. Develop, maintain, and implement a set of plans for system restoration.
- R4. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R4.1. Communications protocols to be used during emergencies.
  - R4.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
  - R4.3. The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.

- R4.4.** Staffing levels for the emergency.
- R5.** Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.
- R6.** The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.
- R7.** The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:
  - R7.1.** The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.
  - R7.2.** The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.
  - R7.3.** The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
  - R7.4.** The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

**C. Measures**

- M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2.** The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

**1.3. Data Retention**

Current plan available at all times.

**1.4. Additional Compliance Information**

Not specified.

## Standard EOP-001-1 — Emergency Operations Planning

### 1.5. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs. Or 25 to 50% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs. Or 50% to 75% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs. Or more than 75% of those agreements do not contain provisions for emergency assistance.
R2 Deleted				
R3	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with four (4) of the sub-components.
R3.1	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.
R3.2	The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not maintained.	The Transmission Operator or Balancing Authority's transmission system emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for emergencies on the transmission system.

**Standard EOP-001-1 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R3.3	The Transmission Operator or Balancing Authority's load shedding plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.	The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.
R3.4	The Transmission Operator or Balancing Authority's system restoration plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's system restoration plans are partially compliant with the requirement but are not maintained.	The Transmission Operator or Balancing Authority's restoration plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for system restoration.
R4	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.
R4.1	The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.
R4.2	The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.	N/A	The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.	The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.

**Standard EOP-001-1 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R4.3	The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.
R4.4	The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency	N/A	N/A	N/A
R5	The Transmission Operator and Balancing Authority's emergency plan has complied with 90% or more of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 70% to 90% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with between 50% to 70% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 50% or less of the number of sub-components
R6	The Transmission Operator and Balancing Authority is missing minor program/procedural elements.	The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans	The Transmission Operator and Balancing Authority has failed to annually review two of its emergency plans or communicate with one of it's neighboring Balancing Authorities.	The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with its Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.
R7	The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.

**Standard EOP-001-1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
R7.1	The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.	N/A	N/A	N/A
R7.2	The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.	N/A	N/A	N/A
R7.3	The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.	N/A	N/A	N/A
R7.4	The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.	N/A	N/A	N/A

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Deleted R2 Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels Corrected typographical errors in BOT approved version of VSLs	Revised

**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system’s own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.



## A. Introduction

1. **Title:** Reliability Coordination — Facilities
2. **Number:** IRO 002-2
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.
- R2. (Deleted)
- R3. Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.
- R4. Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.
- R5. Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.
- R6. Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator

shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.

- R7.** Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.
- R8.** Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.
- R9.** Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

**C. Measures**

- M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 4.
- M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 4.
- M3.** (Deleted)
- M4.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.
- M5.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 7.
- M6.** Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 8)

- M7. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 9 Part 1.
- M8. Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 9 Part 2.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### **1.3. Data Retention**

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1, 2 and 4 through 8.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

#### **1.4. Additional Compliance Information**

None.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator has demonstrated communication facilities for both voice and data exist to all appropriate entities and that they are staffed and available but they are less than adequate.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with one appropriate entity or 2) Data links with one appropriate entity.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with two appropriate entities or 2) Data links with two appropriate entities.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with more than two appropriate entities or 2) Data links with more than two appropriate entities or 3) Communication facilities are not staffed or 4) Communication facilities are not ready.
R2 (Deleted)				
R3	N/A	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with one of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with two of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with three of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.

**Standard IRO-002-2 — Reliability Coordination — Facilities**

R4	N/A	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to one of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to two or more of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to all of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with all neighboring Reliability Coordinators.
R5	The Reliability Coordinator's monitoring systems provide information in a way that is not easily understood and interpreted by the Reliability Coordinator's operating personnel or particular emphasis was not given to alarm management and awareness systems, automated data transfers and synchronized information systems.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that one potential or actual SOL or IROL violation is not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that two or more potential and actual SOL and IROL violations are not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that all potential and actual SOL and IROL violations are identified.

<p>R6</p>	<p>The Reliability Coordinator failed to monitor:                      1) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in one SOL violations or                      2) or operating reserves for a small portion of the Reliability Authority Area.</p>	<p>The Reliability Coordinator failed to monitor:                      1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or to system restoration,                      2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations, or                      3) operating reserves.</p>	<p>The Reliability Coordinator failed to monitor:                      1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing two or more IROLs; or one IROL and to system restoration,                      2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations and operating reserves, or                      3) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or system restoration and operating reserves.</p>	<p>The Reliability Coordinator failed to monitor:                      1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all IROLs and to system restoration, or                      2) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all SOL violations and operating reserves.</p>
<p>R7</p>	<p>The Reliability Coordinator failed to demonstrate that it has:                      1) analysis tools capable of assessing all pre-contingency flows,                      2) analysis tools capable of assessing all post-contingency flows, or                      3) all necessary wide-area overview displays exist.</p>	<p>The Reliability Coordinator failed to demonstrate that it has:                      1) analysis tools capable of assessing the majority of pre-contingency flows,                      2) analysis tools capable of assessing the majority of post-contingency flows, or                      3) the majority of necessary wide-area overview displays exist.</p>	<p>The Reliability Coordinator failed to demonstrate that it has:                      1) analysis tools capable of assessing a minority of pre-contingency flows,                      2) analysis tools capable of assessing a minority of post-contingency flows, or                      3) a minority of necessary wide-area overview displays exist.</p>	<p>The Reliability Coordinator failed to demonstrate that it has:                      1) analysis tools capable of assessing any pre-contingency flows,                      2) analysis tools capable of assessing any post-contingency flows, or                      3) any necessary wide-area overview displays exist.</p>

R8	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored SOLs when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor SOLs when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored one IROL when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor one IROL when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored two or more IROLs when the main monitoring system was unavailable,</li> <li>2) it or a delegated entity monitored SOLs and one IROL when the main monitoring system was unavailable</li> <li>3) it has provisions to monitor two or more IROLs when the main monitoring system is not available, or</li> <li>4) it has provisions to monitor SOLs and one IROL when the main monitoring system was unavailable.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it continuously monitored its Reliability Authority Area.</p>
R9	<p>Reliability Coordinator has approval rights for planned maintenance outages of analysis tools but does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.</p>	<p>Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools.</p>	<p>Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools and does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.</p>	<p>Reliability Coordinator approval is not required for planned maintenance.</p>



**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Deleted R2, M3 and associated compliance elements Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs) Corrected typographical errors in BOT approved version of VSLs	Revised

## A. Introduction

1. **Title:** **Reliability Coordination — Current Day Operations**
2. **Number:** IRO-005-3
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.

5. **Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:
  - R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.
  - R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.4. System real and reactive reserves (actual versus required).
  - R1.5. Capacity and energy adequacy conditions.

- R1.6.** Current ACE for all its Balancing Authorities.
- R1.7.** Current local or Transmission Loading Relief procedures in effect.
- R1.8.** Planned generation dispatches.
- R1.9.** Planned transmission or generation outages.
- R1.10.** Contingency events.
- R2.** Deleted
- R3.** Deleted
- R4.** Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.
- R5.** Deleted
- R6.** Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.
- R7.** The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.
- R8.** Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.
- R9.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.
- R10.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.
- R11.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.

- R12.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.
- R13.** In instances where there is a difference in derived limits, the Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
- R14.** The Transmission Service Provider shall respect SOLs or and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
- R15.** Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.
- R16.** Deleted
- R17.** Deleted

**C. Measures**

- M1.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.
- M2.** Deleted
- M3.** Deleted
- M4.** If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2 and Requirement 10)

- M5.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 6)
- M6.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement 7.
- M7.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 8 Part 1.
- M8.** The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 8 Part 2)
- M9.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1)
- M10.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 11 Part 1)
- M11.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 12)

- M12.** If there is an instance where there is a disagreement on a derived limit, the Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (Part 2 of Requirement 13)
- M13.** Deleted
- M14.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.(Requirement 14 Part 2)
- M15.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 15 Part 1.
- M16.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 15 Part 2.
- M17.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated. (Requirement 15 Part 3)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### **1.3. Data Retention**

For Measures 1 and 11, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures 4–10 and Measures 15 through 16, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure 8, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure 12, the Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure 14, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

### **1.4. Additional Compliance Information**

None.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator failed to monitor one (1) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor two (2) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor more than three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.
R1.1	The Reliability Coordinator failed to monitor the current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.	N/A	N/A	N/A
R1.2	The Reliability Coordinator failed to monitor current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A



**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.3	The Reliability Coordinator failed to monitor current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A
R1.4	The Reliability Coordinator failed to monitor system real and reactive reserves (actual versus required).	N/A	N/A	N/A
R1.5	The Reliability Coordinator failed to monitor capacity and energy adequacy conditions.	N/A	N/A	N/A
R1.6	The Reliability Coordinator failed to monitor current ACE for all its Balancing Authorities.	N/A	N/A	N/A
R1.7	The Reliability Coordinator failed to monitor current local or Transmission Loading Relief procedures in effect.	N/A	N/A	N/A
R1.8	The Reliability Coordinator failed to monitor planned generation dispatches.	N/A	N/A	N/A
R1.9	The Reliability Coordinator failed to monitor planned transmission or generation outages.	N/A	N/A	N/A

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.10	The Reliability Coordinator failed to monitor contingency events.	N/A	N/A	N/A
R2 Deleted				
R3 Deleted				
R4	N/A	The Reliability Coordinator failed to direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities.	The Reliability Coordinator failed to issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	The Reliability Coordinator failed to monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves was provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.
R5 Deleted				
R6	N/A	N/A	The Reliability Coordinator ensured its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information, but failed to assist, when needed, in the development of any required response plans.	The Reliability Coordinator failed to ensure its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R7	N/A	N/A	N/A	The Reliability Coordinator failed to disseminate information within its Reliability Coordinator Area, when required.
R8	N/A	N/A	The Reliability Coordinator monitored system frequency and its Balancing Authorities' performance but failed to direct any necessary rebalancing to return to CPS and DCS compliance.	The Reliability Coordinator failed to monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance or the responsible entity failed to utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R9	N/A	The Reliability Coordinator coordinated with Transmission Operators, Balancing Authorities, and Generator Operators, as needed, to develop action plans to mitigate potential or actual SOL, CPS, or DCS violations but failed to implement said plans, or the Reliability Coordinator coordinated pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in the real-time reliability analysis timeframe but failed to coordinate pending generation and transmission maintenance outages in the next-day reliability analysis timeframe.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations, or the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations and the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.
R10	N/A	N/A	N/A	The Reliability Coordinator failed to assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities, when necessary.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R11	N/A	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange and discussed corrective actions with the appropriate Balancing Authority but failed to direct the Balancing Authority to comply with CPS and DCS.	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange but failed to discuss corrective actions with the appropriate Balancing Authority.	The Reliability Coordinator failed to identify sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange.
R12	N/A	N/A	N/A	The Reliability Coordinator failed to be aware of the impact on inter-area flows of an inter-Balancing Authority or inter-Transmission Operator, following the operation of a Special Protection System that is armed (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation), or the Transmission Operator failed to immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R13	N/A	N/A	N/A	The responsible entity failed to operate the Bulk Electric System to the most limiting parameter in instances where there was a difference in derived limits.
R14	N/A	N/A	N/A	The Transmission Service Provider failed to respect SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
R15	N/A	The Reliability Coordinator failed to notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.	N/A	The Reliability Coordinator who foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area failed to issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area, or the receiving Reliability Coordinator failed to disseminate this information to its impacted Transmission Operators and Balancing Authorities.
R16 Deleted				

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

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Requirement	Lower	Moderate	High	Severe
R17 Deleted				

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Deleted R2, R3, R5; modified R9, R13 and R14; deleted R16 and R17 Deleted M2 and M3; modified M9 and M12; deleted M13 Made conforming changes to data retention Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs) Deleted VSLs associated with R2, R3, R5, R16 and R17; Modified VSLs associated with R9 and R13, and R14	Revised



## A. Introduction

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-1
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.

- R3.** Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4.** Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

**C. Measures**

- M1.** Evidence that the Generator Operator, Transmission Operator, and Balancing Authority reported and coordinated scheduled outage information as indicated in the requirements above.

**D. Compliance**

**1. Compliance Monitoring Process**

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

**1.1. Compliance Monitoring Responsibility**

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

**1.2. Compliance Monitoring Period and Reset Timeframe**

One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

One calendar year.

**1.4. Additional Compliance Information**

Not specified.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Generator Operator failed to provide outage information, in accordance with its Transmission Operators established outage reporting requirements, to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW).
R1.1	N/A	N/A	N/A	The Transmission Operator failed to provide outage information, in accordance with its Reliability Coordinators established outage reporting requirement, to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.

**Standard-TOP-003-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R1.2	The responsible entity failed to provide the information by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.	N/A	N/A	N/A
R1.3	N/A	N/A	N/A	The responsible entity failed to plan or coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators when required.

**Standard-TOP-003-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R2	The responsible entity planned and coordinated scheduled outages of telemetering and control equipment and associated communication channels with its Reliability Coordinator, but failed to coordinate with affected neighboring Transmission Operators, Balancing Authorities, and Generator Operators.	N/A	N/A	The responsible entity failed to plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
R3  R4	N/A  The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 30 minutes but less than or equal to 35 minutes.	N/A  The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 35 minutes but less than or equal to 40 minutes.	N/A  The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 40 minutes but less than or equal to 45 minutes.	The Reliability Coordinator failed to resolve any scheduling of potential reliability conflicts.  The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 45 minutes.

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Modified R1.2 Modified M1 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised

## A. Introduction

1. **Title:** **Operational Reliability Information**
2. **Number:** TOP-005-2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Deleted
  - 4.4. Purchasing Selling Entities.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Deleted
  - R1.1. Deleted
- R2. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”
- R3. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.
- R4. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

## **C. Measures**

- M1.** Evidence that the Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

#### **1.3. Data Retention**

Not specified.

#### **1.4. Additional Compliance Information**

Not specified.



2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1 Deleted				
R1.1 Deleted				
R2	N/A	N/A	N/A	The ISN data recipient failed to sign the NERC Confidentiality Agreement for “Electric System Reliability Data”.
R3	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.
R4	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.

### E. Regional Differences

None identified.

### Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Removed the Reliability Coordinator from the list of responsible functional entities Deleted R1 and R1.1 Modified M1 Deleted VSLs for R1 and R1.1	Revised

## A. Introduction

1. **Title:** Monitoring System Conditions

2. **Number:** TOP-006-2

3. **Purpose:**

To ensure critical reliability parameters are monitored in real-time.

4. **Applicability**

4.1. Transmission Operators.

4.2. Balancing Authorities.

4.3. Generator Operators.

4.4. Reliability Coordinators.

5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

**R1.** Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.

**R1.1.** Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.

**R1.2.** Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.

**R2.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**R3.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.

**R4.** Each Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.

**R5.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important

deviations in operating conditions and to indicate, if appropriate, the need for corrective action.

- R6.** Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
- R7.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

**C. Measures**

- M1.** The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

**D. Compliance**

- 1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

**1.3. Data Retention**

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.

Each Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

**1.4. Additional Compliance Information**

None.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The responsible entity failed to know the status of all generation and transmission resources available for use, even though said information was reported by the Generator Operator, Transmission Operator, or Balancing Authority.
R1.1	N/A	N/A	N/A	The Generator Operator failed to inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
R1.2	N/A	N/A	N/A	The responsible entity failed to inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
R2	N/A	The responsible entity monitors the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, but is not aware of the status of rotating and static reactive resources.	The responsible entity fails to monitor all of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of all rotating and static reactive resources.	The responsible entity fails to monitor any of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**Standard TOP-006-2 — Monitoring System Conditions**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R3	The responsible entity failed to provide any of the appropriate technical information concerning protective relays to their operating personnel.	N/A	N/A	The responsible entity failed to provide all of the appropriate technical information concerning protective relays to their operating personnel.
R4	N/A	N/A	The responsible entity has either weather forecasts or past load patterns, available to predict the system's near-term load pattern, but not both.	The responsible entity failed to have both weather forecasts and past load patterns, available to predict the system's near-term load pattern.
R5	N/A	N/A	The responsible entity used monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions, but does not have indication of the need for corrective action.	The responsible entity failed to use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions.
R6	N/A	N/A	N/A	The responsible entity failed to use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
R7	N/A	N/A	N/A	The responsible entity failed to monitor system frequency.

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Modified R4 Modified M4 Modified Data Retention for M4 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised



## A. Introduction

1. **Title:** **Emergency Operations Planning**
2. **Number:** EOP-001-0
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Dates:** ~~April 1, 2005~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- ~~R2. The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.~~
- R3. Each Transmission Operator and Balancing Authority shall:
  - R3.1. Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R3.2. Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R3.3. Develop, maintain, and implement a set of plans for load shedding.
  - R3.4. Develop, maintain, and implement a set of plans for system restoration.
- R4. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R4.1. Communications protocols to be used during emergencies.

- R4.2.** A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
- R4.3.** The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
- R4.4.** Staffing levels for the emergency.
- R5.** Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.
- R6.** The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.
- R7.** The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:
  - R7.1.** The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.
  - R7.2.** The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.
  - R7.3.** The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
  - R7.4.** The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

### **C. Measures**

- M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2.** The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

## Standard EOP-001-~~0~~1 — Emergency Operations Planning

### 1.3. Data Retention

Current plan available at all times.

### 1.4. Additional Compliance Information

Not specified.

### ~~2. Levels of Non-Compliance~~

~~2.1. Level 1: One of the applicable elements of Attachment 1 EOP-001-0 has not been addressed in the emergency plans.~~

~~2.2. Level 2: Two of the applicable elements of Attachment 1 EOP-001-0 have not been addressed in the emergency plans.~~

~~2.3. Level 3: Three of the applicable elements of Attachment 1 EOP-001-0 have not been addressed in the emergency plans.~~

~~1.5. Level 4: Four or more of the applicable elements of Attachment 1 EOP-001-0 have not been addressed in the emergency plans or a plan does not exist.~~

Violation Severity Levels (VSLs) for this standard were not approved by their ballot pool but were approved by the BOT on February 28, 2008 and the VSLs replace the Levels of Non-compliance.

When the BOT approves new VSLs for this standard, the new VSLs will replace those shown below. The new VSLs for R2 will be retired when EOP-001-1 becomes effective.

**Standard EOP-001-0.1 — Emergency Operations Planning**

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs.  Or 25 to 50% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs.  Or 50% to 75% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs.  Or more than 75% of those agreements do not contain provisions for emergency assistance.
<del>R2</del>	<del>The Transmission Operator has demonstrated the existence of the emergency load reduction plan but the plan will take longer than 30 minutes.</del>	<del>N/A</del>	<del>The Transmission Operator fails to include details on how load reduction is to be implemented in sufficient amount and time to mitigate IROL violation.</del>	<del>The Transmission Operator failed to demonstrate the existence of emergency load reduction plans for all identified IROLs.</del>
R3	The Transmission Operator or Balancing Authority failed to comply with one (1) of the <del>of</del> sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with four (4) of the sub-components.
R3.1	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are <del>not</del> <del>neither</del> maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.
R3.2	The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or	The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not	The Transmission Operator or Balancing Authority's transmission system emergency plans are <del>not</del> <del>neither</del> maintained nor	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans

**Standard EOP-001-0.1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
	minor program/procedural elements.	maintained.	implemented.	for emergencies on the transmission system.
R3.3	The Transmission Operator or Balancing Authority's load shedding plans are <del>is</del> missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.	The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are <del>not</del> <u>neither</u> maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.
R3.4	The Transmission Operator or Balancing Authority's system restoration plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's system restoration plans are partially compliant with the requirement but are not maintained.	The Transmission Operator or Balancing Authority's restoration plans are <del>not</del> <u>neither</u> maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for system restoration.
R4	The Transmission Operator or Balancing Authority failed to comply with one (1) of the <del>of</del> sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.
R4.1	The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.

**Standard EOP-001-0.1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
R4.2	The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.	N/A	The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.	The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.
R4.3	The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.
R4.4	The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency	N/A	N/A	N/A
R5	The Transmission Operator and Balancing Authority's emergency plan has complied with 90% or more of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 70% to 90% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with between 50% to 70% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 50% or less of the number of sub-components

**Standard EOP-001-~~0~~1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
R6	The Transmission Operator and Balancing Authority is missing minor program/procedural elements.	The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans	The Transmission Operator and Balancing Authority has failed to annually review <del>2</del> <u>two</u> of it's emergency plans or communicate with <del>1</del> <u>one</u> of it's neighboring Balancing Authorities.	The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with it's Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.
R7	The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the <del>of</del> sub-components.	The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.
R7.1	The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.	N/A	N/A	N/A
R7.2	The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.	N/A	N/A	N/A

**Standard EOP-001-~~0-1~~— Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
R7.3	The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.	N/A	N/A	N/A
R7.4	The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.	N/A	N/A	N/A



**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Deleted R2 Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels Corrected typographical errors in BOT approved version of VSLs	Revised

**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system’s own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

## A. Introduction

1. **Title:** Reliability Coordination — Facilities
2. **Number:** IRO 002-~~12~~
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.
5. **Proposed Effective Date:** ~~January 1, 2007~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.
- ~~R2. Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities, or adjacent Reliability Coordinators.~~
- R3. Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.
- R4. Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.
- R5. Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.

- R6. Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.
- R7. Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.
- R8. Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.
- R9. Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

### C. Measures

- M1. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 4.
- M2. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 4.
- ~~M3. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a letter to Transmission Operators, Balancing Authorities, Transmission Owners, Generator Owners, Generator Operators, and Load Serving Entities, or adjacent Reliability Coordinators, or other equivalent evidence that will be used to confirm that the Reliability Coordinator has requested the data required to support its reliability coordination tasks. (Requirement 2)~~
- M4. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.

- M5. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 7.
- M6. Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 8)
- M7. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 9 Part 1.
- M8. Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 9 Part 2.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

#### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### 1.3. Data Retention

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1, 2 and 4 through 8.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

#### 1.4. Additional Compliance Information

None.

### ~~2. Levels of Non-Compliance for a Reliability Coordinator~~

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Did not confirm that the network used for data exchange to other Reliability Coordinators is secure as specified in R3.~~

~~2.3. Level 3: There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~2.3.1 Has not requested the data required to support its reliability coordination tasks. (Requirement 2)~~

~~2.4. Does not control its Reliability Coordinator analysis tools, including the exercising of final approvals for planned maintenance (R7) or does not have current procedures in place to mitigate the effects of analysis tool outages as specified in R9.~~

~~2.5. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.5.1 Does not have or could not demonstrate the use of voice communication facilities (or show data links) to one or more Transmission Operators, Generator Operators or Balancing Authorities with authority over Bulk Electrical System equipment or with one or more neighboring Reliability Coordinators. (R1 and R4)~~

~~2.5.2 Does not have real-time monitoring capability of its Reliability Coordinator Area and surrounding Reliability Coordinator Areas as specified in R5.~~

~~2.5.31.4.1 Does not have a documented procedure for the use of its backup monitoring facilities. (R8)~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator has demonstrated communication facilities for both voice and data exist to all appropriate entities and that they are staffed and available but they are less than adequate.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with one appropriate entity or 2) Data links with one appropriate entity.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with two appropriate entities or 2) Data links with two appropriate entities.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with more than two appropriate entities or 2) Data links with more than two appropriate entities or 3) Communication facilities are not staffed or 4) Communication facilities are not ready.

Requirement	Lower	Moderate	High	Severe
R2	<p>The Reliability Coordinator demonstrated that it</p> <p>1) determined its data requirements and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators with a material impact on the Bulk Electric System in its Reliability Coordination Area but did not request the data from Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators with minimal impact on the Bulk Electric System in its Reliability Coordination Area or</p> <p>2) determined its data requirements necessary to perform its reliability functions with the exceptions of data that may be needed for administrative purposes such as data reporting.</p>	<p>The Reliability Coordinator demonstrated that it determined the majority but not all of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</p>	<p>The Reliability Coordinator demonstrated that it determined</p> <p>1) some but less than the majority of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators or</p> <p>2) all of its data requirements necessary to support its reliability coordination functions but failed to demonstrate that it requested data from two of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</p>	<p>The Reliability Coordinator failed to demonstrate that it</p> <p>1) determined its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators or</p> <p>2) requested the data from three or more of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</p>



Requirement	Lower	Moderate	High	Severe
R3	N/A	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with one of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with two of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with three of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.
R4	N/A	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to one of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to two or more of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to all of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with all neighboring Reliability Coordinators.
R5	The Reliability Coordinator's monitoring systems provide information in a way that is not easily understood and interpreted by the Reliability Coordinator's operating personnel or particular emphasis was not given to alarm management and awareness systems, automated data transfers and synchronized information systems.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that one potential or actual SOL or IROL violation is not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that two or more potential and actual SOL and IROL violations are not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that all potential and actual SOL and IROL violations are identified.

Requirement	Lower	Moderate	High	Severe
R6	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in one SOL violations or</li> <li>2) or operating reserves for a small portion of the Reliability Authority Area.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or to system restoration,</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations, or</li> <li>3) operating reserves.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing two or more IROLs; or one IROL and to system restoration,</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations and operating reserves, or</li> <li>3) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or system restoration and operating reserves.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all IROLs and to system restoration, or</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all SOL violations and operating reserves.</li> </ol>
R7	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing all pre-contingency flows,</li> <li>2) analysis tools capable of assessing all post-contingency flows, or</li> <li>3) all necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing the majority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing the majority of post-contingency flows, or</li> <li>3) the majority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing a minority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing a minority of post-contingency flows, or</li> <li>3) a minority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing any pre-contingency flows,</li> <li>2) analysis tools capable of assessing any post-contingency flows, or</li> <li>3) any necessary wide-area overview displays exist.</li> </ol>

Requirement	Lower	Moderate	High	Severe
R8	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored SOLs when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor SOLs when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored one IROL when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor one IROL when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored two or more IROLs when the main monitoring system was unavailable,</li> <li>2) it or a delegated entity monitored SOLs and one IROL when the main monitoring system was unavailable</li> <li>3) it has provisions to monitor two or <del>or</del> more IROLs when the main monitoring system is not available, or</li> <li>4) it has provisions to monitor SOLs and one IROL when the main monitoring system was unavailable.</li> </ol>	<p><b>R10.</b> The Reliability Coordinator failed to demonstrate that it continuously monitored its Reliability Authority Area.</p>
R9	<p>Reliability Coordinator has approval rights for planned maintenance outages of analysis tools but does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.</p>	<p>Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools.</p>	<p>Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools and does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.</p>	<p>Reliability Coordinator approval is not required for planned maintenance.</p>

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Deleted R2, M3 and associated compliance elements Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs) Corrected typographical errors in BOT approved version of VSLs	Revised

Retire Entire Standard

A. Introduction

1. **Title:** ~~Reliability Coordination — Operations Planning~~
2. **Number:** ~~IRO-004-1~~
3. **Purpose:** ~~Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.~~
4. **Applicability**
  - ~~4.1. Reliability Coordinators.~~
  - ~~4.2. Balancing Authorities.~~
  - ~~4.3. Transmission Operators.~~
  - ~~4.4. Transmission Service Providers.~~
  - ~~4.5. Transmission Owners.~~
  - ~~4.6. Generator Owners.~~
  - ~~4.7. Generator Operators.~~
  - ~~4.8. Load-Serving Entities.~~
5. **Proposed Effective Date:** ~~November 1, 2006~~

~~In those jurisdictions where no regulatory approval is required, the standard shall be retired on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.~~

~~In those jurisdictions where regulatory approval is required, the standard shall be retired effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.~~

B. Requirements

- ~~R1. Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.~~
- ~~R2. Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.~~
- ~~R3-R1. Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.~~

~~R4. Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.~~

~~R5. Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.~~

~~R6-R2. \_\_\_\_\_ If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.~~

~~R7. Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.~~

## C. Measures

~~M1. Evidence that the Reliability Coordinator conducted next day contingency analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System could be operated reliably in anticipated normal and Contingency conditions.~~

## D. Compliance

### 1. Compliance Monitoring Process

~~Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on-site audit, Reliability Coordinators will be asked to provide documentation showing that next day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits, etc.~~

#### 1.1. Compliance Monitoring Responsibility

~~Self-Certification: Each Reliability Coordinator must annually self-certify compliance to its Regional Reliability Organization with the completion of the studies and action plans in Requirements R1, R2 and R3.~~

~~Exception Reporting: Reliability Coordinators will prepare a monthly report to the Regional Reliability Organization for each month that system studies were not conducted, indicating the dates that studies were not done and the reason why.~~

#### 1.2. Compliance Monitoring Period and Reset Time Frame

~~One year without a violation from the time of the violation.~~

#### 1.3. Data Retention

~~Documentation shall be available for 3 months to provide verification that system studies were performed as required.~~

**1.4. Additional Compliance Information**

~~None identified.~~

**2. Levels of Non-Compliance**

~~2.1. Level 1: System studies were not conducted for one day in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.2. Level 2: System studies were not conducted for 2–3 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.3. Level 3: System studies were not conducted for 4–5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.4. Level 4: System studies were not conducted for more than 5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

**E. Regional Differences**

~~None identified.~~

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

## A. Introduction

1. **Title:** Reliability Coordination — Current Day Operations
2. **Number:** IRO-005-~~23~~
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.
5. **Effective Date:** ~~January 1, 2007~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:
  - R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.
  - R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.4. System real and reactive reserves (actual versus required).
  - R1.5. Capacity and energy adequacy conditions.
  - R1.6. Current ACE for all its Balancing Authorities.



**R1.7.** Current local or Transmission Loading Relief procedures in effect.

**R1.8.** Planned generation dispatches.

**R1.9.** Planned transmission or generation outages.

**R1.10.** Contingency events.

~~**R2.** Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.~~

~~**R3.** As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.~~

**R4.** Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.

~~**R5.** Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.~~

**R6.** Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.

**R7.** The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.

**R8.** Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

**R9.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

**R10.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.

- R11.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.
- R12.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.
- R13.** ~~Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection.~~ In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
- R14.** ~~Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide area view.~~ The Transmission Service Providers shall respect these SOLs or and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
- R15.** Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.
- R16.** ~~Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.~~
- R17.** ~~When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.~~

### **C. Measures**

- M1.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.

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- ~~M2. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Historical Tag Archive information, Interchange Transaction records, computer printouts, voice recordings or transcripts of voice recordings or equivalent evidence that will be used to confirm that it was aware of and made Interchange Transaction information available to all other Reliability Coordinators, as specified in Requirement 2.~~
- ~~M3. If a potential or actual IROL violation occurs, the Reliability Coordinator involved in the event shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, system event logs, operator action notes or equivalent evidence that will be used to determine if it initiated control actions or emergency procedures to relieve that IROL violation within 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~
- M4. If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2 and Requirement 10)
- M5. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 6)
- M6. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement 7.
- M7. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 8 Part 1.
- M8. The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 8 Part 2)
- M9. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1)

- M10.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 11 Part 1)
- M11.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 12)
- M12.** If there is an instance where there is a disagreement on a derived limit, the **Reliability Coordinator**, Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (Part 2 of Requirement 13)
- ~~**M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it provided SOL and IROL information to Transmission Service Providers within its Reliability Coordinator Area. (Requirement 14, Part 1)~~
- M14.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.(Requirement 14 Part 2)
- M15.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 15 Part 1.
- M16.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 15 Part 2.
- M17.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified

all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated. (Requirement 15 Part 3)

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### 1.3. Data Retention

For Measures 1 and 11, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures ~~24~~-10 and ~~Measure 13~~, and Measures 15 through 16, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure 8, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure 12, the ~~Reliability Coordinator~~, Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure 14, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

None.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

~~**2. Levels of Non-Compliance for a Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider**~~

~~**2.1. Level 1:** Not applicable.~~

~~**2.2. Level 2:** Not applicable.~~

~~**2.3. Level 3:** Not applicable.~~

~~**2.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~**2.4.1** Did not follow the Reliability Coordinator's directives in accordance with R8 Part 2).~~

~~**2.4.2** Did not operate to the most limiting parameter when a difference in derived limits existed. (R13 Part 2)~~

~~**3. Levels of Non-Compliance for a Reliability Coordinator:**~~

~~**3.1. Level 1:** Not applicable.~~

~~**3.2. Level 2:** Did not make Interchange Transaction information available to all other Reliability Coordinators in the Interconnection. (Requirement 2)~~

~~**3.3. Level 3:** There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~**3.3.1** Did not communicate to each of its Balancing Authorities and Transmission Operators to make them aware of GMD forecast information or did not assist in the development of any required response plans to a predicted GMD. (Requirement 6)~~

~~**3.3.2** Did not disseminate information within its Reliability Coordinator Area. (Requirement 7)~~

~~**3.4. Level 4:** There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~**3.4.1** Does not meet one or more of the requirements as specified in requirement 1 (Requirements 1.1 through R1.9)~~

~~**3.4.2** Did not make Interchange Transaction information available to all other Reliability Coordinators. (Requirement 2)~~

- ~~3.4.3 Did not initiate control actions or emergency procedures to relieve an IROL violation without delay, and no longer than 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~
- ~~3.4.4 Did not direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2)~~
- ~~3.4.5 Did not monitor the system frequency or each of its Balancing Authorities performance or did not direct rebalancing to return to DCS and CPS compliance. (Requirement 8 Part 1)~~
- ~~3.4.6 Did not coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. (Requirement 9)~~
- ~~3.4.7 When it identified a source of large Area Control Errors, it did not initiate corrective actions with the appropriate Balancing Authority if the problem was inside its Reliability Coordinator Area. (Requirement 11 part 1)~~
- ~~3.4.8 Did not provide evidence that it was aware of the impact of the operation of a Special Protection System on inter-area flows. (Requirement 12)~~
- ~~3.4.9 Did not operate to the most limiting parameter when a difference in derived limits existed. (Requirement 13 Part 2)~~
- ~~3.4.10 Did not provide Transmission Service Providers with SOLs or IROLs (within the Reliability Coordinator's wide-area view) (Requirement 14 Part 1)~~
- ~~3.4.11 Did not issue alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area. (Requirement 15)~~

#### ~~4. Levels of Non-Compliance for a Transmission Service Provider~~

~~4.1. Level 1: Not applicable.~~

~~4.2. Level 2: Not applicable.~~

~~4.3. Level 3: Not applicable.~~

~~4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~4.4.1 Did not operate to the most limiting parameter when a difference in derived limits existed. (R13 Part 2)~~

~~1.4.1 Did not respect the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14 Part 2)~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator failed to monitor one (1) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor two (2) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor more than three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.
R1.1	The Reliability Coordinator failed to monitor the current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.	N/A	N/A	N/A
R1.2	The Reliability Coordinator failed to monitor current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A



**Standard IRO-005-~~2.3~~ — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.3	The Reliability Coordinator failed to monitor current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A
R1.4	The Reliability Coordinator failed to monitor system real and reactive reserves (actual versus required).	N/A	N/A	N/A
R1.5	The Reliability Coordinator failed to monitor capacity and energy adequacy conditions.	N/A	N/A	N/A
R1.6	The Reliability Coordinator failed to monitor current ACE for all its Balancing Authorities.	N/A	N/A	N/A
R1.7	The Reliability Coordinator failed to monitor current local or Transmission Loading Relief procedures in effect.	N/A	N/A	N/A
R1.8	The Reliability Coordinator failed to monitor planned generation dispatches.	N/A	N/A	N/A
R1.9	The Reliability Coordinator failed to monitor planned transmission or generation outages.	N/A	N/A	N/A

Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R1.10	The Reliability Coordinator failed to monitor contingency events.	N/A	N/A	N/A
<del>R2</del>	<del>N/A</del>	<del>N/A</del>	<del>The Reliability Coordinator was aware of all Interchange Transactions that wheeled through, sourced, or sunked in its Reliability Coordinator Area, but failed to make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</del>	<del>The Reliability Coordinator failed to be aware of all Interchange Transactions that wheeled through, sourced, or sunked in its Reliability Coordinator Area, and failed to make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</del>
<del>R3</del>	<del>N/A</del>	<del>The Reliability Coordinator worked with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and initiated control actions or emergency procedures to relieve the violation within 30 minutes, but failed to ensure all resources, including load shedding, were available to address a potential or actual IROL violation.</del>	<del>The Reliability Coordinator worked with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and ensured all resources, including load shedding, were available to address a potential or actual IROL violation, but failed to initiate control actions or emergency procedures to relieve the violation within 30 minutes.</del>	<del>The Reliability Coordinator failed to work with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and failed to initiate control actions or emergency procedures to relieve the violation within 30 minutes.</del>

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R4	N/A	The Reliability Coordinator failed to direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities.	The Reliability Coordinator failed to issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	The Reliability Coordinator failed to monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves was provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.
<del>R5</del>	<del>N/A</del>	<del>N/A</del>	<del>The Reliability Coordinator identified the cause of a potential or actual SOL or IROL violation, but failed to initiate a control action or emergency procedure to relieve the potential or actual IROL violation within 30 minutes.</del>	<del>The Reliability Coordinator failed to identify the cause of a potential or actual SOL or IROL violation and failed to initiate a control action or emergency procedure to relieve the potential or actual IROL violation.</del>
R6	N/A	N/A	The Reliability Coordinator ensured its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information, but failed to assist, when needed, in the development of any required response plans.	The Reliability Coordinator failed to ensure its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information.

**Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R7	N/A	N/A	N/A	The Reliability Coordinator failed to disseminate information within its Reliability Coordinator Area, when required.
R8	N/A	N/A	The Reliability Coordinator monitored system frequency and its Balancing Authorities' performance but failed to direct any necessary rebalancing to return to CPS and DCS compliance.	The Reliability Coordinator failed to monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance or the responsible entity failed to utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R9	N/A	The Reliability Coordinator coordinated with Transmission Operators, Balancing Authorities, and Generator Operators, as needed, to develop action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations but failed to implement said plans, or the Reliability Coordinator coordinated pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in the real-time reliability analysis timeframe but failed to coordinate pending generation and transmission maintenance outages in the next-day reliability analysis timeframe.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations, or the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations and the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.
R10	N/A	N/A	N/A	The Reliability Coordinator failed to assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities, when necessary.

**Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R11	N/A	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange and discussed corrective actions with the appropriate Balancing Authority but failed to direct the Balancing Authority to comply with CPS and DCS.	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange but failed to discuss corrective actions with the appropriate Balancing Authority.	The Reliability Coordinator failed to identify sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange.
R12	N/A	N/A	N/A	The Reliability Coordinator failed to be aware of the impact on inter-area flows of an inter-Balancing Authority or inter-Transmission Operator, following the operation of a Special Protection System that is armed (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation), or the Transmission Operator failed to immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

Standard IRO-005-~~2.3~~ — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R13	N/A	N/A	N/A	<p><del>The Reliability Coordinator failed to shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operated to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area could result in a SOL or IROL violation in another area of the Interconnection or t</del>The responsible entity failed to operate the Bulk Electric System to the most limiting parameter in instances where there was a difference in derived limits.</p>

Standard IRO-005-~~2.3~~ — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R14	N/A	N/A	N/A	<p><del>The Reliability Coordinator failed to make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view, or t</del>The Transmission Service Providers failed to respect <del>these</del> SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p>
R15	N/A	The Reliability Coordinator failed to notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.	N/A	The Reliability Coordinator who foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area failed to issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area, or the receiving Reliability Coordinator failed to disseminate this information to its impacted Transmission Operators and Balancing Authorities.



Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R16	N/A	N/A	<del>The Reliability Coordinator confirmed the reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas and discussed options to mitigate potential or actual SOL or IROL violations, but failed to take actions as necessary to always act in the best interests of the Interconnection at all times.</del>	<del>The Reliability Coordinator failed to confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas, or failed to discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</del>

Standard IRO-005-~~2.3~~ — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R17	N/A	N/A	N/A	<p><del>The Reliability Coordinator either failed to evaluate the local and wide-area impacts of an IROL or SOL that was exceeded, in either real-time or post-contingency, or the Reliability Coordinator evaluated the local and wide-area impacts of an IROL or SOL that was exceeded, both real-time and post-contingency, and determined that the actions being taken were not appropriate and sufficient to return the system to within IROL in thirty (30) minutes, but failed to direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</del></p>

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<p><u>Deleted R2, R3, R5; modified R9, R13 and R14; deleted R16 and R17</u></p> <p><u>Deleted M2 and M3; modified M9 and M12; deleted M13</u></p> <p><u>Made conforming changes to data retention</u></p> <p><u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u></p> <p><u>Deleted VSLs associated with R2, R3, R5, R16 and R17;</u></p> <p><u>Modified VSLs associated with R9 and R13, and R14</u></p>	<u>Revised</u>

## A. Introduction

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-~~0~~1
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:** ~~April 1, 2005~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to ~~its Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.

- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.
- R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

### C. Measures

- M1. Evidence that the Generator Operator, Transmission Operator, and Balancing Authority, ~~and Reliability Coordinator~~ reported and coordinated scheduled outage information as indicated in the requirements above.

### D. Compliance

#### 1. Compliance Monitoring Process

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

#### 1.1. Compliance Monitoring Responsibility

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

#### 1.2. Compliance Monitoring Period and Reset Timeframe

One calendar year without a violation from the time of the violation.

#### 1.3. Data Retention

One calendar year.

**1.4. Additional Compliance Information**

Not specified.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

**~~2.~~ Levels of Non-Compliance**

~~2.1. Level 1: Each entity responsible for reporting information under Requirements R1 and R3 has a process in place to provide information to their Reliability Coordinator but does not have a process in place (where permitted by legal agreements) to provide this information to the neighboring Balancing Authority or Transmission Operator.~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

**1.5. Level 4:** — There is no process in place to exchange outage information, or the entity responsible for reporting information under Requirements R1 to R3 does not follow the directives of the Reliability Coordinator to cancel or reschedule an outage.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Generator Operator failed to provide outage information, in accordance with its Transmission Operators established outage reporting requirements, to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW).

**Standard-TOP-003-0-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R1.1	N/A	N/A	N/A	The Transmission Operator failed to provide outage information, in accordance with its Reliability Coordinators established outage reporting requirement, to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.
R1.2	The responsible entity failed to provide the information by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.	N/A	N/A	N/A



**Standard-TOP-003-0.1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R1.3	N/A	N/A	N/A	The responsible entity failed to plan or coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators when required.
R2	The responsible entity planned and coordinated scheduled outages of telemetering and control equipment and associated communication channels with its Reliability Coordinator, but failed to coordinate with affected neighboring Transmission Operators, Balancing Authorities, and Generator Operators.	N/A	N/A	The responsible entity failed to plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
R3	N/A	N/A	N/A	The Reliability Coordinator failed to resolve any scheduling of potential reliability conflicts.

**Standard-TOP-003-0.1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R4	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 30 minutes but less than or equal to 35 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 35 minutes but less than or equal to 40 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 40 minutes but less than or equal to 45 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 45 minutes.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Modified R1.2 Modified M1 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised

## A. Introduction

1. **Title:** **Operational Reliability Information**
2. **Number:** TOP-005-~~1~~2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - ~~4.3. Reliability Coordinators.~~
  - 4.4. Purchasing Selling Entities.

5. **Proposed Effective Date:** ~~November 1, 2006~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

~~R1.— Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.~~

~~R1.1.— Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.~~

- R2. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”
- R3. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.

R4. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

### C. Measures

M1. Evidence that the ~~Reliability Coordinator~~, Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

##### 1.3. Data Retention

Not specified.

##### 1.4. Additional Compliance Information

Not specified.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

#### ~~2. Levels of Non-Compliance~~

~~2.1. Level 1:— Each entity responsible for reporting information under Requirements R1 to R5 is providing the requesting entities with the data required, in specified time intervals and format, but there are problems with consistency of delivery identified in the measuring process that need remedy (e.g., the data is not supplied consistently due to equipment malfunctions, or scaling is incorrect).~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

1.5. **Level 4:**— Each entity responsible for reporting information under Requirements R1 to R5 R3 is not providing the requesting entities with data with the specified content, timeliness, or format. The information missing is included in the requesting entity's list of data.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
<del>R1</del>	<del>The responsible entity failed to provide all of the data requested by its Reliability Coordinator.</del>	<del>N/A</del>	<del>N/A</del>	<del>The responsible entity failed to provide all of the data requested by its Reliability Coordinator.</del>
<del>R1.1</del>	<del>N/A</del>	<del>N/A</del>	<del>N/A</del>	<del>The Reliability Coordinator failed to identify the data necessary to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</del>
R2	N/A	N/A	N/A	The ISN data recipient failed to sign the NERC Confidentiality Agreement for “Electric System Reliability Data”.
R3	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.
R4	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Removed the Reliability Coordinator from the list of responsible functional entities</u> <u>Deleted R1 and R1.1</u> <u>Modified M1</u> <u>Deleted VSLs for R1 and R1.1</u>	<u>Revised</u>

**Attachment 1-TOP-005-0**

**Electric System Reliability Data**

This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.

~~1. The following information shall be updated at least every ten minutes:~~

~~1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:~~

~~1.1.1 Status.~~

~~1.1.2 MW or ampere loadings.~~

~~1.1.3 MVA capability.~~

~~1.1.4 Transformer tap and phase angle settings.~~

~~1.1.5 Key voltages.~~

~~1.2. Generator data.~~

~~1.2.1 Status.~~

~~1.2.2 MW and MVAR capability.~~

~~1.2.3 MW and MVAR net output.~~

~~1.2.4 Status of automatic voltage control facilities.~~

~~1.3. Operating reserve.~~

~~1.3.1 MW reserve available within ten minutes.~~

~~1.4. Balancing Authority demand.~~

~~1.4.1 Instantaneous.~~

~~1.5. Interchange.~~

~~1.5.1 Instantaneous actual interchange with each Balancing Authority.~~

~~1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.~~

~~1.5.3 Interchange Schedules for the next 24 hours.~~

~~1.6. Area Control Error and frequency.~~

~~1.6.1 Instantaneous area control error.~~

~~1.6.2 Clock hour area control error.~~

~~1.6.3 System frequency at one or more locations in the Balancing Authority.~~

~~2. Other operating information updated as soon as available.~~

~~2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.~~



~~2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.~~

~~2.3. Forecast peak demand for current day and next day.~~

~~2.4. Forecast changes in equipment status.~~

~~2.5. New facilities in place.~~

~~2.6. New or degraded special protection systems.~~

~~2.7. Emergency operating procedures in effect.~~

~~2.8. Severe weather, fire, or earthquake.~~

~~2.9. Multi-site sabotage.~~

## A. Introduction

1. **Title:** Monitoring System Conditions

2. **Number:** TOP-006-~~1~~2

3. **Purpose:**

To ensure critical reliability parameters are monitored in real-time.

4. **Applicability**

4.1. Transmission Operators.

4.2. Balancing Authorities.

4.3. Generator Operators.

4.4. Reliability Coordinators.

5. **Proposed Effective Date:** ~~January 1, 2007~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

**R1.** Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.

**R1.1.** Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.

**R1.2.** Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.

**R2.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**R3.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.

**R4.** Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.

**R5.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important

deviations in operating conditions and to indicate, if appropriate, the need for corrective action.

- R6. Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
- R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

### C. Measures

- M1. The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4. Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

### D. Compliance

- 1. Compliance Monitoring Process

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

**1.3. Data Retention**

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.

Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

**1.4. Additional Compliance Information**

None.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

~~2. Levels of Non-Compliance for Reliability Coordinators:~~

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Not applicable.~~

~~2.3. Level 3: Not applicable.~~

~~2.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.4.1 Does not monitor all of the applicable items listed in Requirement 2.~~

~~2.4.2 Did not have the information specified in R4.~~

~~2.4.3 Did not bring to the attention of its operators, important deviations in operating conditions and the need for corrective actions. (Requirement 5)~~

~~2.4.4 No evidence it monitors system frequency. (Requirement 7)~~

~~3. Levels of Non-Compliance for Generator Operators:~~

~~3.1. Level 1: Not applicable.~~

~~3.2. Level 2: Not applicable.~~

~~3.3. Level 3: Not applicable.~~

~~3.4. Level 4: Did not inform its Host Balancing Authority and/or the Transmission Operator of all generation resources available for use. (R1.1)~~

~~4. Levels of Non-Compliance for Transmission Operators and Balancing Authorities:~~

~~4.1. Level 1: Not applicable.~~

~~4.2. Level 2: Not applicable.~~

~~4.3. Level 3: Not applicable.~~

~~4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~4.4.1 Did not inform the Reliability Coordinator and/or other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use in accordance with R1.2.~~

~~4.4.2 Does not monitor all the applicable items listed in R2.~~

~~4.4.3 Did not have the information specified in R4.~~

~~4.4.4 Does not have monitoring to bring to the attention of operating personnel important deviations in operating conditions and the need for corrective actions as specified in R5.~~

~~4.4.5 No evidence it monitors system frequency. (R7).~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The responsible entity failed to know the status of all generation and transmission resources available for use, even though said information was reported by the Generator Operator, Transmission Operator, or Balancing Authority.
R1.1	N/A	N/A	N/A	The Generator Operator failed to inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
R1.2	N/A	N/A	N/A	The responsible entity failed to inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
R2	N/A	The responsible entity monitors the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, but is not aware of the status of rotating and static reactive resources.	The responsible entity fails to monitor all of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of all rotating and static reactive resources.	The responsible entity fails to monitor any of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**Standard TOP-006-1.2— Monitoring System Conditions**

Requirement	Lower	Moderate	High	Severe
R3	The responsible entity failed to provide any of the appropriate technical information concerning protective relays to their operating personnel.	N/A	N/A	The responsible entity failed to provide all of the appropriate technical information concerning protective relays to their operating personnel.
R4	N/A	N/A	The responsible entity has either weather forecasts or past load patterns, available to predict the system's near-term load pattern, but not both.	The responsible entity failed to have both weather forecasts and past load patterns, available to predict the system's near-term load pattern.
R5	N/A	N/A	The responsible entity used monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions, but does not have indication of the need for corrective action.	The responsible entity failed to use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions.
R6	N/A	N/A	N/A	The responsible entity failed to use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
R7	N/A	N/A	N/A	The responsible entity failed to monitor system frequency.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Modified R4 Modified M4 Modified Data Retention for M4 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised



## **Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### **Development Steps Completed:**

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6. Balloted December 18, 2003–January 6, 2004.
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8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007)

### **Description of Current Draft:**

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team delayed balloting pending the outcome of the FAC-010, FAC-011, and FAC-014 standards. During the waiting period, the drafting team modified the set of IROL standards to bring them into conformance with the latest guidelines for drafting standards. The IROL SDT is posting the revised set of IROL standards and a revised implementation plan for a 30-day comment period through April 25, 2008.

### **Future Development Plan:**

#### **Anticipated Actions**

1. Post for 30-day pre-ballot period.
2. Conduct initial ballot of standards.
3. Conduct recirculation ballot of standards.
4. Submit to BOT for adoption.
5. File for regulatory approvals.

#### **Anticipated Date**

May 12–June 10, 2008  
June 11–20, 2008  
June 30–July 9, 2008  
July 29, 2008  
To be determined

### **Definitions of Terms Used in Standard**

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## A. Introduction

1. **Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2. Each Reliability Coordinator shall perform a Real-Time Assessment at least every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3. When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, the results of its Operational Planning Analyses.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence to show it conducted a Real-Time Assessment at least once every 30 minutes. This evidence could include, but is not limited to, dated computer log showing times the assessment was conducted, dated checklists, or other evidence.
- M3. The Reliability Coordinator shall have and provide upon request, evidence to confirm that it shared the results of its Operational Planning Analyses or Real-Time

Assessments with those entities expected to take actions based on that information. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated transcripts of voice records, dated facsimiles, or other evidence.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

#### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

The Reliability Coordinator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

The Reliability Coordinator shall retain evidence for Requirement R1, Measure M1 and Requirement R2, Measure M2 for a rolling 30 days. The Reliability Coordinator shall keep evidence for Requirement R3, Measure M3 for a rolling three months.

#### **1.5. Additional Compliance Information**

None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except one of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except two of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except three of 30 days. (R1)	Missed performing an Operational Planning Analysis that covers all aspects of the requirement for four or more of 30 days. (R1)
<b>R2</b>	A Real-time Assessment was not conducted for one 30-minute period within a 24-hour period (R2)	Real-time Assessments were not conducted for two 30-minute periods within a 24-hour period (R2)	Real-time Assessments were not conducted for three 30-minute periods within a 24-hour period (R2)	Real-time Assessments were not conducted for more than three 30-minute periods within a 24-hour period (R2)
<b>R3</b>		Shared the results with some but not all of the entities that were required to take action (R3)		Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Differences**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
3. SAC approves development of standard (November 20, 2003).
4. JIC assigns development of standard to NERC (January 10, 2003).
5. Drafting team posts drafts for comment (February 18–April 2, 2003) (July 1–August 29, 2003).
6. Balloted December 18, 2003–January 6, 2004.
7. Drafting team posts drafts for comment (March 1–April 14, 2004).
8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007)
10. Drafting team posts drafts and implementation plan for pre-ballot review (March 15 – April 13, 2007)

### Description of Current Draft:

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team delayed balloting pending the outcome of the FAC-010, FAC-011, and FAC-014 standards. During the waiting period, the drafting team modified the set of IROL standards to bring them into conformance with the latest guidelines for drafting standards. The IROL SDT is posting the revised set of IROL standards and a revised implementation plan for a 30-day comment period through April 25, 2008.

### Future Development Plan:

#### Anticipated Actions

1. Post for 30-day pre-ballot period.
2. Conduct initial ballot of standards.
3. Conduct recirculation ballot of standards.

#### Anticipated Date

May 12–June 10, 2008  
June 11–20, 2008  
June 30–July 9, 2008

4. Submit to BOT for adoption.
5. File for regulatory approvals.

July 29, 2008

To be determined



### **Definitions of Terms Used in Standard**

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None.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. The IROLs covered in this standard are limited to those associated with contingencies studied under FAC-011 and FAC-014.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. For all IROLs identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2. For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3. When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4. When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

- R5.** If unanimity cannot be reached on the value for an IROL or its  $T_v$ , each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

**C. Measures**

- M1.** Each Reliability Coordinator shall have, and provide upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement R1 and Requirement R2. This evidence shall include a list of any IROLs (and each associated  $T_v$ ) identified in advance, along with one or more dated Operating Processes, Procedures, or Plans that that will be used.
- M2.** Each Reliability Coordinator shall have, and provide upon request, evidence to confirm that it acted or directed others to act in accordance with Requirement R3 and Requirement R4. This evidence could include, but is not limited to, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.
- M3.** For a situation where Reliability Coordinators disagree on the value of an IROL or its  $T_v$  the Reliability Coordinator shall have, and provide upon request, evidence to confirm that it used the most conservative of the values under consideration, without delay. Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence. (R5)

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

**1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

**1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

Exception Reporting

#### 1.4. Data Retention

The Reliability Coordinator, shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain evidence of Requirement R1, Requirement R2, and Measure M1, for a rolling 12 months.

The Reliability Coordinator shall retain evidence of Requirement R3, Requirement R4, Requirement R5, Measure M2, and Measure M3 for a rolling 12 months.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records, and all IROL Violation Reports submitted since the last audit.

#### 1.5. Additional Compliance Information

**Exception Reporting:** For each instance of exceeding an IROL for time greater than IROL  $T_v$ , the Reliability Coordinator shall submit an IROL Violation Report to its Compliance Enforcement Authority within 30 days of the initiation of the event.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>				An IROL was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
<b>R2</b>				An IROL identified one or more days in advance does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL's T <sub>v</sub> . (R2)
<b>R3</b>			An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but the Operating Processes, Procedures, or Plans that were implemented did not prevent exceeding the IROL. (R3)	An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
<b>R4</b>			Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five minutes or more before acting or directing others to act to mitigate the	Actual system conditions showed that there was an instance of exceeding an IROL, and a delay before acting or directing others to act resulted in a failure to mitigate the magnitude and

Requirement	Lower	Moderate	High	Severe
			magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL $T_v$ (R4)	duration of the instance of exceeding that IROL within $T_v$ (R4) <b>OR</b> Actual system conditions showed that there was an instance of exceeding an IROL, and that IROL was not resolved within the IROL's $T_v$ . (R4)
<b>R5</b>	Not applicable.	Not applicable.	Not applicable.	There was a disagreement on the IROL or its $T_v$ and the most conservative limit under consideration was not used. (R5)

**E. Regional Variances**

None.

**F. Associated Documents**

IROL Violation Report

**Version History**

Version	Date	Action	Change Tracking

## Standard Development Roadmap

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#### Anticipated Actions

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#### Anticipated Date

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June 11–20, 2008  
June 30–July 9, 2008  
July 29, 2008  
To be determined



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None.

## A. Introduction

1. **Title:**           **Reliability Coordinator Data Specification and Collection**
2. **Number:**       IRO-010-1
3. **Purpose:**        To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:**

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In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
  - R1.1. List of required data and information.
  - R1.2. Mutually agreeable format.
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
  - R1.4. Process for data provision when automated Real-Time system operating data is unavailable.

- R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

### C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, a documented data specification that contains all elements identified in Requirement R1.
- M2. The Reliability Coordinator shall have, and provide upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. This evidence could include, but is not limited to, dated paper or electronic notice used to distribute its data specification showing recipient, and data or information requested or other equivalent evidence. (R2)
- M3. The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and provide upon request, evidence to confirm that it provided data and information, as specified in Requirement R3. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated computer printouts, dated SCADA data, or other equivalent evidence.

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Enforcement Authority

For Reliability Coordinators and other functional entities that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

##### 1.3. Compliance Monitoring and Enforcement Processes

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner, shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain its current, in force data specification for Requirement R1, Measure M1.

The Reliability Coordinator shall keep evidence of its most recent distribution of its data specification and evidence to show the data supplied in response to that specification for Requirement R2, Measure M2 and Requirement R3 Measure M3.

For data that is requested in advance of real-time, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Requirement R3 Measure M3 for the Reliability Coordinator's most recent data specification.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

#### **1.5. Additional Compliance Information**

**1.5.1** None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	Data specification is complete with the following exception – no process for data provision when automated Real-Time system operating data is unavailable. (R1)	Data specification is complete with the following exception: Missing the mutually agreeable format (R1)	Data specification incomplete (missing either the list of required data, or the timeframe for providing data, (R1)	No data specification (R1)
<b>R2</b>	Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status.	Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Distributed its data specification to greater than or equal to 75% - but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Data specification distributed to less than 75% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)
<b>R3</b>	Provided greater than or equal to 95% but less than 100% of the data and information as specified. (R3)	Provided greater than or equal to 85% but less than 95% of the data and information as specified. (R3)	Provided greater than or equal to 75% but less than 85% of the data and information as specified. (R3)	Provided less than 75% of the data and information as specified. (R3)

**E. Regional Variances**

None.

**F. Associated Documents**

None.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

~~**Real-Time Data:** Real-Time measured values, state estimator values derived from the measured values, or other calculated values derived from the measured values — may include directly monitored data, Inter-utility data exchange (e.g., Interconnection Control Area Communication Protocol or SCADA Data), and manually collected data.~~

~~**Real-Time Monitoring:** The act of scanning data and drawing conclusions about what the data indicates.~~

~~**Self-Certification:** A process by which an entity does a self-evaluation to determine if it is compliant with the specific requirements for a reliability standard.~~

The IROL SDT deleted R1 and moved R2 into IRO-009.

## **A. Introduction**

~~1. Title: Monitoring the Reliability Coordinator Wide Area~~

~~2. Number: IRO-007-1~~

~~3. Purpose: To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is continuously monitored.~~

### **4. Applicability**

~~4.1. Reliability Coordinator~~

~~5. Proposed Effective Date: First day of first quarter, three months after regulatory approvals.~~

## **B. Requirements**

~~R1. The Reliability Coordinator shall perform Real Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs). (Violation Risk Factor: Medium) (Mitigation Time Horizon: Real-time Operations)~~

~~R2. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (Violation Risk Factor: High) (Mitigation Time Horizon: Real-time Operations)~~

## **C. Measures**

~~M1. The Reliability Coordinator shall have Real Time Data for system operating parameters within its Wide Area available in a form that its System Operators can compare to its IROLs as evidence of real-time monitoring.~~

~~M2. For an IROL or its  $T_v$ , without agreement between Reliability Coordinators, the Reliability Coordinator shall have, and provide upon request, evidence that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence to confirm that it used the most conservative of the values under consideration.~~

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

~~Electric Reliability Organization~~

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

~~The Performance Reset Period shall be 12 months from the last violation.~~

#### **1.3. Data Retention**

~~The Reliability Coordinator shall have evidence of compliance with M1 upon request.~~

~~The Reliability Coordinator shall keep evidence to show compliance with M2 for three calendar years~~

~~The Compliance Monitor shall keep audited data for three calendar years.~~

#### **1.4. Additional Compliance Information**



~~The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.~~

~~The Reliability Coordinator shall demonstrate the following to its Compliance Monitor to inspect during a scheduled, on-site review or as part of an investigation upon complaint:~~

~~1.4.1 Its System Operators actively monitoring and comparing Real-Time system operating parameters associated with IROLs.~~

~~2. Violation Severity Levels~~

~~2.1. Lower: — Not applicable.~~

~~2.2. Moderate: — Not applicable.~~

~~2.3. High: — Not applicable.~~

~~2.4. Severe: — A severe violation occurs if either of the following conditions are present:~~

~~2.4.1 System operating parameters not monitored in Real-Time and compared against IROLs.~~

~~2.4.2 There was a disagreement on the IROL or its T<sub>v</sub> and the most conservative limit under consideration was not used.~~

~~E. Regional Differences~~

~~None~~

~~F. Associated Documents~~

~~None~~

**Version History**

Version	Date	Action	Change Tracking

## **Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### **Development Steps Completed:**

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
3. SAC approves development of standard (November 20, 2003).
4. JIC assigns development of standard to NERC (January 10, 2003).
5. Drafting team posts drafts for comment (February 18–April 2, 2003) (July 1–August 29, 2003).
6. Balloted December 18, 2003–January 6, 2004.
7. Drafting team posts drafts for comment (March 1–April 14, 2004).
8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007)

### **Description of Current Draft:**

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team delayed balloting pending the outcome of the FAC-010, FAC-011, and FAC-014 standards. During the waiting period, the drafting team modified the set of IROL standards to bring them into conformance with the latest guidelines for drafting standards. The IROL SDT is posting the revised set of IROL standards and a revised implementation plan for a 30-day comment period through April 25, 2008.

### **Future Development Plan:**

#### **Anticipated Actions**

#### **Anticipated Date**

- |   |                        |
|---|------------------------|
| 1. Post for 30-day pre-ballot period.         | May 12 – June 10, 2008 |
| 2. Conduct initial ballot of standards.       | June 11-20, 2008       |
| 3. Conduct recirculation ballot of standards. | June 30 – July 9, 2008 |
| 4. Submit to BOT for adoption.                | July 29, 2008          |
| 5. File for regulatory approvals.             | To be determined       |

### **Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation and up to 12 months ahead. Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-Time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## A. Introduction

1. **Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:**

~~5. The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC 014-1.~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. ~~The Each~~ Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2. ~~The Each~~ Reliability Coordinator shall perform a Real-Time Assessments at least every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3. When a Reliability Coordinator determines that the results of an ~~the results of the Reliability Coordinator's~~ Operational Planning Analyses Analysis or Real-Time Assessments indicates the need for specific operational actions to prevent or mitigate an instances of exceeding an IROLs, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have, and provide upon request, the results of its ~~latest~~ Operational Planning Analyses Analyses.

M2. The Reliability Coordinator shall have, and provide upon request, evidence ~~that could include, but is not limited to computer output, operator logs, checklists, or other evidence~~ to show it conducted a Real-Time Assessment at least once every 30 minutes. This evidence could include, but is not limited to, dated computer log showing times the assessment was conducted, dated checklists, or other evidence.

D. The Reliability Coordinator shall have and provide upon request, evidence ~~that could include, but is not limited to operating logs, voice recordings, transcripts of voice records, facsimiles, or other equivalent evidence that will be used~~ to confirm that it shared the results of its Operational Planning Analyses ~~and or~~ Real-Time Assessments with those entities expected to take actions based on that information. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated transcripts of voice records, dated facsimiles, or other evidence.

M3.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance ~~Monitoring Responsibility~~ Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

~~Electric Reliability Organization~~

**1.2. Compliance Monitoring Period and Reset Time Frame**

~~The Performance Reset Period shall be 12 months from the last violation~~ Not applicable.

**1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

**1.3.1.4. Data Retention**

The Reliability Coordinator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Compliance ~~Monitor~~ Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

~~audited data for three calendar years.~~

~~6.~~ The Reliability Coordinator shall ~~keep~~retain ~~its latest day ahead Operational Planning Analysis evidence for Requirement R1, Measure M1 and Requirement R2, Measure M2 for a rolling 30 days.~~

~~The Reliability Coordinator shall keep evidence for M2 for the most recent two days.~~

The Reliability Coordinator shall keep evidence for Requirement R3, Measure M3 for a rolling three months.

~~one month.~~

**1.4.1.5. Additional Compliance Information**

~~The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews once every three years, investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.~~

None.

2. Violation Severity Levels

~~2.1. Lower: — Not applicable.~~

~~2.2. Moderate: Shared the results with some but not all of the entities that were required to take action (R3).~~

~~2.3. High: Real-Time Assessments were conducted but not as frequently as required (R2).~~

~~2.4. Severe: — A severe violation exists if any of the following conditions are present:~~

~~2.4.1 — Did not perform an Operational Planning Analysis for the next day in accordance with R1.~~

~~2.4.2 — Did not perform any Real-time Assessments for any continuous eight hour period (R2).~~

~~2.4.3 — Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).~~

<u>Requirement</u>	<u>Lower</u>	<u>Moderate</u>	<u>High</u>	<u>Severe</u>
<u>R1</u>	<u>Performed an Operational Planning Analysis that covers all aspects of the requirement for all except one of 30 days. (R1)</u>	<u>Performed an Operational Planning Analysis that covers all aspects of the requirement for all except two of 30 days. (R1)</u>	<u>Performed an Operational Planning Analysis that covers all aspects of the requirement for all except three of 30 days. (R1)</u>	<u>Missed performing an Operational Planning Analysis that covers all aspects of the requirement for four or more of 30 days. (R1)</u>
<u>R2</u>	<u>A Real-time Assessment was not conducted for one 30-minute period within a 24-hour period (R2)</u>	<u>Real-time Assessments were not conducted for two 30-minute periods within a 24-hour period (R2)</u>	<u>Real-time Assessments were not conducted for three 30-minute periods within a 24-hour period (R2)</u>	<u>Real-time Assessments were not conducted for more than three 30-minute periods within a 24-hour period (R2)</u>
<u>R3</u>		Shared the results with some but not all of the entities that were required to take action (R3)		Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

E. Regional ~~Differences~~ Variances

None

F. Associated Documents

None

Version History

Version	Date	Action	Change Tracking



## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
3. SAC approves development of standard (November 20, 2003).
4. JIC assigns development of standard to NERC (January 10, 2003).
5. Drafting team posts drafts for comment (February 18–April 2, 2003) (July 1–August 29, 2003).
6. Balloted December 18, 2003–January 6, 2004.
7. Drafting team posts drafts for comment (March 1–April 14, 2004).
8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007)
10. Drafting team posts drafts and implementation plan for pre-ballot review (March 15 – April 13, 2007)

### Description of Current Draft:

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team delayed balloting pending the outcome of the FAC-010, FAC-011, and FAC-014 standards. During the waiting period, the drafting team modified the set of IROL standards to bring them into conformance with the latest guidelines for drafting standards. The IROL SDT is posting the revised set of IROL standards and a revised implementation plan for a 30-day comment period through April 25, 2008.

### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

- |   |                        |
|---|------------------------|
| 1. Post for 30-day pre-ballot period.         | May 12 – June 10, 2008 |
| 2. Conduct initial ballot of standards.       | June 11-20, 2008       |
| 3. Conduct recirculation ballot of standards. | June 30 – July 9, 2008 |
| 4. Submit to BOT for adoption.                | July 29, 2008          |
| 5. File for regulatory approvals.             | To be determined       |

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Occurrence Period:** ~~The time period in which performance is measured and evaluated.~~

~~None introduced in this standard.~~

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. The IROLs covered in this standard are limited to those associated with contingencies ~~that were~~ studied under FAC-011 and FAC-014.
5. **Proposed Effective Date:** ~~The latter of either the first day of the first quarter, six~~  
In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.  
In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. For ~~each all~~ IROLs ~~that is~~ identified one or more days prior to the current day ~~in advance of Real-time~~, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2. For each IROL that is identified one or more days prior to the current day ~~in advance of Real-time~~, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3. When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4. When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

R5. If unanimity cannot be reached on the value for an IROL or its  $T_v$ , each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration. (Violation Risk Factor: High) (Time Horizon: Real-time Operations)

### C. Measures

- M1.** ~~The Each~~ Reliability Coordinator shall have, and provide upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement R1 and Requirement R2. This evidence shall include a list of any IROLs (and each associated  $T_v$ ) identified in advance, along with one or more ~~documented~~ dated Operating Processes, Procedures, or Plans that that will be used.
- M2.** ~~The Each~~ Reliability Coordinator shall have, and provide upon request, evidence ~~that could include, but is not limited to, operating logs, voice recordings, transcripts of voice recordings, or other equivalent evidence that will be used~~ to confirm that it acted or directed others to act in accordance with Requirement R3 and Requirement R4. This evidence could include, but is not limited to, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.
- M3.** For a situation where Reliability Coordinators disagree on the value of an IROL or its  $T_v$ , the Reliability Coordinator shall have, and provide upon request, evidence to confirm that it used the most conservative of the values under consideration, without delay. Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence. (R5)

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance ~~Monitoring Responsibility~~ Enforcement Authority

~~Electric Reliability Organization For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.~~

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

~~The Performance-Reset Period shall be 12 months from the last violation. Not applicable.~~

##### 1.3. Compliance Monitoring and Enforcement Processes

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

1.3.Exception Reporting

#### **1.4. Data Retention**

The Reliability Coordinator, shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

~~The Reliability Coordinator shall keep IROL Violation Reports, operations logs, or other documentation for three calendar years. The Compliance Monitor shall keep audited data for three calendar years.~~

The Reliability Coordinator shall retain evidence of Requirement R1, Requirement R2, and Measure M1, for a rolling 12 months.

The Reliability Coordinator shall retain evidence of Requirement R3, Requirement R4, Requirement R5, Measure M2, and Measure M3 for a rolling 12 months.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records, and all IROL Violation Reports submitted since the last audit.

##### **1.4.1.5. Additional Compliance Information**

~~**Exception Reporting:** The Reliability Coordinator shall demonstrate compliance through self-certification submitted to its Compliance Monitor annually and reporting by exception. If an IROL is exceeded for time greater than  $T_v$ , the Reliability Coordinator shall complete and submit to its Compliance Monitor within five days, an IROL Violation Report.~~

~~The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.~~

~~The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:~~

~~**1.4.1** Operations logs or other documentation indicating the magnitude and duration of each instance of exceeding an IROL and the actions or directives issued for each of these instances.~~

~~**1.4.2** IROL Violation Reports.~~

For each instance of exceeding an IROL for time greater than IROL  $T_v$ , the Reliability Coordinator shall submit an IROL Violation Report to its Compliance Enforcement Authority within 30 days of the initiation of the event.

**2. Violation Severity Levels**

~~1.5.Low: Not applicable.~~

~~1.6.Moderate Not applicable.~~

~~1.7.High: Not applicable.~~

~~1.8.Severe: There shall be a severe violation severity level if any of the following conditions exist:~~

~~1.8.1 One or more IROLs identified in advance of real time do not have Operating Processes, Procedures, or Plans that identify actions to prevent or mitigate instances of exceeding those IROLs. (R1 and R2)~~

~~1.8.2 An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures or Plans were implemented to prevent exceeding that IROL. (R3)~~

~~1.8.3 Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five<sup>+</sup> minutes or more before taking a control action or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL (R4)~~

~~1.8.4 Actual system conditions showed that there was an instance of exceeding an IROL, and that IROL was not resolved within the IROL’s T<sub>v</sub>. (R4)~~

<u>Requirement</u>	<u>Lower</u>	<u>Moderate</u>	<u>High</u>	<u>Severe</u>
<u>R1</u>				<u>An IROL was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)</u>
<u>R2</u>				<u>An IROL identified one or more days in advance does not have an Operating</u>

<sup>1</sup> The five minutes is not a ‘grace period’ before taking any action – the five minutes recognizes that the first actions taken may not result in an action that can be independently confirmed.

<u>Requirement</u>	<u>Lower</u>	<u>Moderate</u>	<u>High</u>	<u>Severe</u>
				<u>Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL's T<sub>v</sub>. (R2)</u>
<u>R3</u>			<u>An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but the Operating Processes, Procedures, or Plans that were implemented did not prevent exceeding the IROL. (R3)</u>	<u>An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)</u>
<u>R4</u>			<u>Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL T<sub>v</sub> (R4)</u>	<u>Actual system conditions showed that there was an instance of exceeding an IROL, and a delay before acting or directing others to act resulted in a failure to mitigate the magnitude and duration of the instance of exceeding that IROL within T<sub>v</sub> (R4)</u>  <u>OR</u> <u>Actual system conditions showed that there was an instance of exceeding an IROL, and that IROL was not resolved within the IROL's T<sub>v</sub>. (R4)</u>
<u>R5</u>	<u>Not applicable.</u>	<u>Not applicable.</u>	<u>Not applicable.</u>	<u>There was a disagreement</u>

<u>Requirement</u>	<u>Lower</u>	<u>Moderate</u>	<u>High</u>	<u>Severe</u>
				<u>on the IROL or its <math>T_v</math> and the most conservative limit under consideration was not used. (R5)</u>



E. Regional ~~Differences~~Variances

None

F. Associated Documents

IROL Violation Report

Version History

Version	Date	Action	Change Tracking

## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
3. SAC approves development of standard (November 20, 2003).
4. JIC assigns development of standard to NERC (January 10, 2003).
5. Drafting team posts drafts for comment (February 18–April 2, 2003) (July 1–August 29, 2003).
6. Balloted December 18, 2003–January 6, 2004.
7. Drafting team posts drafts for comment (March 1–April 14, 2004).
8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007).

### Description of Current Draft:

This draft reflects conforming changes made to the standards based on comments submitted during the January 2–February 15, 2007 comment period. The drafting team delayed balloting pending the outcome of the FAC-010, FAC-011, and FAC-014 standards. During the waiting period, the drafting team modified the set of IROL standards to bring them into conformance with the latest guidelines for drafting standards. The IROL SDT is posting the revised set of IROL standards and a revised implementation plan for a 30-day comment period through April 25, 2008.

### Future Development Plan:

#### Anticipated Actions

1. Post for 30-day pre-ballot period.
2. Conduct initial ballot of standards.
3. Conduct recirculation ballot of standards.
4. Submit to BOT for adoption.
5. File for regulatory approvals.

#### Anticipated Date

May 12 – June 10, 2008  
June 11-20, 2008  
June 30 – July 9, 2008  
July 29, 2008  
To be determined

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

| None. ~~introduced in this standard.~~

## A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:**

~~5. The latter of either the first day of the first quarter, three months after regulatory approvals or coincident with the effective date for FAC-014-1.~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
  - R1.1. List of required data and information.
  - R1.2. Mutually agreeable format.
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

- R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.
- R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

### C. Measures

- M1.** The Reliability Coordinator shall have, and provide upon request, a documented data specification that contains all elements identified in Requirement [R1](#).
- M2.** The Reliability Coordinator shall have, and provide upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. This evidence could include, but is not limited to, dated paper or electronic notice used to distribute its data specification showing recipient, and data or information requested or other equivalent evidence. (R2)
- M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and provide upon request, evidence ~~that could include but is not limited to, operator logs, voice recordings, computer printouts, SCADA data, or other equivalent evidence that will be used~~ to confirm that it provided data and information, as specified in Requirement [R3](#). This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated computer printouts, dated SCADA data, or other equivalent evidence.

### D. Compliance

#### **M4.1. Compliance Monitoring Process**

##### **M4.11.1. Compliance ~~Monitoring Responsibility~~ Enforcement Authority**

For Reliability Coordinators and other functional entities that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority. \_\_\_\_\_

~~Electric Reliability Organization~~

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

~~The Performance Reset Period shall be 12 months from the last violation. Not applicable.~~

### 1.3. Compliance Monitoring and Enforcement Processes

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### 1.3.1.4. Data Retention

~~The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner, shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:~~

~~The Reliability Coordinator shall retain its current, in force data specification for Requirement R1, Measure M1. keep its most current data specification.~~

~~1.4.—The Reliability Coordinator shall keep evidence of its most recent distribution of its data specification and evidence to show the data supplied in response to that specification to show compliance with for Requirement R2, Measure M2 and Requirement R3 Measure M3.~~

~~—For data that is requested in advance of real-time, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Requirement R3 Measure M3 for 3 months. the Reliability Coordinator's most recent data specification.~~

~~The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.~~

~~The Compliance Monitor shall keep audited data for three calendar years.~~

#### 1.4.1.5. Additional Compliance Information

~~—The Reliability Coordinator shall demonstrate compliance through Self-Certification submitted to its Compliance Monitor annually. The Compliance Monitor may also use scheduled on-site reviews every three years, and investigations initiated in response to a complaint, or other methods as provided for in the Compliance Monitoring Enforcement Program, to assess performance.~~

~~—The Reliability Coordinator shall have the following available for its Compliance Monitor to inspect during a scheduled, on-site review or within 5 days of a request as part of an investigation upon complaint:~~

~~5.2.1 Data specification(s).~~

~~5.2.2 Proof of distribution of the data specification(s).~~

1.5.1 None.

**1.2. Violation Severity Levels for the Reliability Coordinator**

**~~1.1. Lower: There shall be a lower violation severity level if any of the following conditions exist:~~**

~~1.1.1 Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)~~

~~1.1.2 Provided greater than or equal to 95% but less than 100% of the data and information to other Reliability Coordinators as specified. (R3)~~

**~~1.2. Moderate: There shall be a moderate violation severity level if any of the following conditions exist:~~**

~~1.2.1 Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)~~

~~1.2.2 Provided greater than or equal to 85%, but less than 95% of the data and information to other Reliability Coordinators as specified. (R3)~~

**~~1.3. High: There shall be a high violation severity level if any of the following conditions exist:~~**

~~1.3.1 Data specification incomplete (missing one of the following: list of required data, a mutually agreeable format, a timeframe for providing data, a data provision process to use when automated Real-Time system operating data is unavailable). (R1)~~

~~1.3.2 Distributed its data specification to greater than or equal to 70% but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)~~

~~1.3.3 Provided greater than or equal to 70% but less than 85% of the data and information to other Reliability Coordinators as specified. (R3)~~

**~~1.4. Severe: There shall be a severe violation severity level if any of the following conditions exist:~~**

~~1.4.1 No data specification (R1)~~

~~1.4.2 Data specification distributed to less than 70% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)~~

~~1.4.3 Provided less than 70% of the data and information to other Reliability Coordinators as specified. (R3)~~

**~~2. Violation Severity Levels for the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner~~**



- ~~2.1. Lower: Provided greater than or equal to 95% but less than 100% of the data and information to the Reliability Coordinator as specified. (R3)~~
- ~~2.2. Moderate: Provided greater than or equal to 85%, but less than 95% of the data and information to the Reliability Coordinator as specified. (R3)~~
- ~~2.3. High: Provided greater than or equal to 70%, but less than 85% of the data and information to the Reliability Coordinator as specified. (R3)~~
- ~~2.4. Severe: Provided less than 70% of the data and information to the Reliability Coordinator as specified. (R3)~~

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	<u>Data specification is complete with the following exception – no process for data provision when automated Real-Time system operating data is unavailable. (R1)</u>	<u>Data specification is complete with the following exception: Missing the mutually agreeable format (R1)</u>	<u>Data specification incomplete (missing either the list of required data, or the timeframe for providing data, (R1)</u>	<u>No data specification (R1)</u>
<b>R2</b>	<u>Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status.</u>	<u>Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)</u>	<u>Distributed its data specification to greater than or equal to 75% - but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)</u>	<u>Data specification distributed to less than 75% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)</u>
<b>R3</b>	<u>Provided greater than or equal to 95% but less than 100% of the data and information as specified. (R3)</u>	<u>Provided greater than or equal to 85% but less than 95% of the data and information as specified. (R3)</u>	<u>Provided greater than or equal to 75% but less than 85% of the data and information as specified. (R3)</u>	<u>Provided less than 75% of the data and information as specified. (R3)</u>

|

**E. Regional ~~Differences~~Variances**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking



## Standards Announcement

Comment Period Opens

March 26–April 25, 2008

**Now available at:** <http://www.nerc.com/~filez/standards/IROL.html>

### **Comment Period for IROL Standards Opens March 26, 2008**

The following Interconnection Reliability Operating Limit (IROL) standards, the associated IROL Implementation Plan, and proposed conforming revisions to already-approved standards are all posted for a 30-day comment period through April 25, 2008:

- IRO-008-1 Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009-1 Reliability Coordinator Actions to Operate Within IROLs
- IRO-010-1 Reliability Coordinator Data Specification and Collection

This set of Version 1 standards requires the Reliability Coordinator to have plans in place to prevent and mitigate instances of exceeding IROLs, to direct actions in support of operating within IROLs, and to specify and collect data needed to support these activities to prevent instability, uncontrolled separation, or cascading outages.

Please use this [electronic form](#) to submit comments on the IROL standards and the associated implementation plan.

If you need an off-line, unofficial copy of the questions in the comment form, there is a copy of the comment form posted at the following site:

<http://www.nerc.com/~filez/standards/IROL.html>

Please use only the electronic form to submit comments by **April 25, 2008**. If you experience any difficulties in using the electronic form, please contact Barbara Bogenrief at 609-452-8060.

### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

*For more information or assistance, please contact Maureen Long, Standards Process Manager, at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or at (813) 468-5998.*



The logo for NERC (North American Electric Reliability Corporation) features the letters "NERC" in a bold, black, sans-serif font. Below the letters is a horizontal blue bar with a white gradient.

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards (IRO-008–IRO-10)

## Introduction

This implementation plan is associated with the following Interconnection Reliability Operating Limit (IROL) standards:

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

These three standards are “new” standards, not revisions to Version 0 standards. These standards do, however address some of the same topics as addressed in some of the Version 0 standards.

The ballot for each of the IROL standards includes the retirement of associated requirements from some already approved standards and effective dates identified in this implementation plan.

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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## **Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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### **Prerequisite Approvals**

Reliability Standard FAC-014-1 — Establish and Communicate System Operating Limits, needs to be effective before this set of standards becomes effective:

- IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection

### **Conforming Changes to Requirements in Already Approved Standards**

Many elements contained in the set of proposed ‘Operate within IROL Standards’ address the same or similar performance objectives as requirements in already approved standards. To eliminate duplication and minimize confusion, the IROL SDT recommends that the retirement or revision of the following requirements in Version 0 Standards coincident with the implementation of the proposed standards. Justification for these revisions and retirements is provided in the tables on the following pages.

EOP-001-0 — Emergency Operations Planning

- Retire R2

IRO-002-1 — Reliability Coordination – Facilities

- Retire R2

IRO-004-1 — Reliability Coordination – Operations Planning

- Retire entire standard (R1 through R6)

IRO-005-2 — Reliability Coordination – Current Day Operations

- Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination

- Modify R1.2

TOP-005-1 — Operational Reliability Information

- Retire R1 and R1.1
- Convert Attachment 1 into a reference

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control

- Modify R4





**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Revisions or Retirements to Already Approved Standards**

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

<p align="center"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p align="center"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>EOP-001-0</b></p> <p><b>R2.</b> The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.</p>	<p><b>IRO-009-1 R1.</b></p> <p><b>R1.</b> For all IROLs identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding those IROLs.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.</li> <li>▪ The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's <math>T_v</math>, which can be shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-002-1</b></p> <p><b>R2.</b> Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-002-1 R2 should be retired.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed requirements are more explicit than the associated requirement in IRO-002-0.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p><b>R2.</b> Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p>	<p><b>IRO-008-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-004-1 R1 and R2 should be retired.</li> <li>▪ IRO-008 R1 requires the Reliability Coordinator to look at its 'Wide Area' rather than its 'Reliability Coordinator Area' in conducting its Operational Planning Analyses.</li> <li>▪ IRO-004-1 R2 is not measurable and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008 becomes effective.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R3.</b> Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.</p> <p><b>R6.</b> If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For all IROLs identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL’s <math>T_v</math>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.</li> <li>▪ IRO-009-1 R1 and R2 require the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>▪ IRO-009-1 R3 includes language that is more explicit than the language in IRO-004-1 R6: ‘results of these studies’ is not as specific as ‘when an assessment of actual or expected system conditions’.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R4.</b> Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.</p> <p><b>R5.</b> Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.</p> <p><b>IRO-005-2</b></p> <p><b>R2.</b> Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-010-1 becomes effective, IRO-004-1 R4 and R5 should be retired.
- IRO-010-1 is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share. The periodicity for collecting the data is addressed in IRO-010-1 R1.3. Only a fraction of the reliability-related data needed by the Reliability Coordinator and shared by the Reliability Coordinator is addressed in IRO-004-1 R4 and R5.
- When IRO-010-1 becomes effective, IRO-005-2 R2 should be retired. The e-tag system replaced the need for this requirement. In addition, if the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p align="center"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p align="center"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b>  <b>R3.</b> As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.</p> <p><b>R5.</b> Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For all IROLs identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's <math>T_v</math>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's <math>T_v</math>.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R3, and R5 should be retired.</li> <li>▪ IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a <math>T_v</math> that is much shorter than 30 minutes.</li> <li>▪ IRO-005 R5 can lead the Compliance Enforcement Authority to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.</li> </ul>	



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b></p> <p><b>R9.</b> The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del>, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For all IROLs identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's <math>T_v</math>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's <math>T_v</math>.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R9 should be modified.</li> <li>▪ IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b>  <b>R13.</b> Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For all IROLs identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's <math>T_v</math>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's <math>T_v</math>.</p> <p><b>R5.</b> If unanimity cannot be reached on the value for an IROL or its <math>T_v</math>, all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration.</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-009-1 becomes effective, IRO-005-2 R13 should be retired.
- IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.
- The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-009-1 R5 has a similar requirement that is applicable totally to the Reliability Coordinator and focused solely on IROLs.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b></p> <p>(text in blue is recommended for deletion or retirement – the red text is an addition to the text that already exists in the requirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b></p> <p><b>R14.</b> Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROs within its wide-area view. The Transmission Service Providers shall respect <del>these SOLs or</del> and IROs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p><b>R16.</b> Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IRO violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p><b>R17.</b> When an IRO or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IRO in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IRO or SOL.</p>	<p><b>IRO-009-1</b></p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IRO will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IRO.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IRO, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IRO within the IRO's T<sub>v</sub>.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.</li> <li>▪ IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROs – R14 implies that the Transmission Service Provider may respect ‘either’ SOLs or IROs.</li> <li>▪ IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>▪ IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IRO violation – but some IROs have a T<sub>v</sub> that is much shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-003-0</b></p> <p><b>R1.</b> Generator Operators and Transmission Operators shall provide planned outage information.</p> <p style="padding-left: 20px;"><b>R1.1</b> Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p style="padding-left: 20px;"><b>R1.2</b> Each Transmission Operator shall provide outage information daily to <del>its Reliability Coordinator, and to</del> affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. <del>The Reliability Coordinator shall establish the outage reporting requirements.</del></p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-003-0 R1.2 should be modified.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to provide data to other Reliability Coordinators in accordance with the data specifications it has received from those other Reliability Coordinators. Daily outage data is one of the types of data that is expected to be identified on the Reliability Coordinator’s documented data specification since this is data needed to maintain real-time models.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-005-1</b>  <b>R1.</b> Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</p> <p style="padding-left: 40px;"><b>R1.1</b> Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-005-1 R1 and R1.1 should be retired.</li> <li>▪ Under IRO-010-1 each Reliability Coordinator must document what data and information it needs and entities must provide that data. The data needed by the Reliability Coordinator is needed for more than just reliability assessments – some of the data is used for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in R1 of TOP-005-1) have data and information needed by the Reliability Coordinator.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Already Approved Standard	Proposed Replacement
<p><b>TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data</b></p> <p>This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.</p> <ol style="list-style-type: none"> <li>1. The following information shall be updated at least every ten minutes:               <ol style="list-style-type: none"> <li>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:                   <ol style="list-style-type: none"> <li>1.1.1 Status.</li> <li>1.1.2 MW or ampere loadings.</li> <li>1.1.3 MVA capability.</li> <li>1.1.4 Transformer tap and phase angle settings.</li> <li>1.1.5 Key voltages.</li> </ol> </li> <li>1.2. Generator data.                   <ol style="list-style-type: none"> <li>1.2.1 Status.</li> <li>1.2.2 MW and MVAR capability.</li> <li>1.2.3 MW and MVAR net output.</li> <li>1.2.4 Status of automatic voltage control facilities.</li> </ol> </li> <li>1.3. Operating reserve.                   <ol style="list-style-type: none"> <li>1.3.1 MW reserve available within ten minutes.</li> </ol> </li> <li>1.4. Balancing Authority demand.                   <ol style="list-style-type: none"> <li>1.4.1 Instantaneous.</li> </ol> </li> <li>1.5. Interchange.                   <ol style="list-style-type: none"> <li>1.5.1 Instantaneous actual interchange with each Balancing Authority.</li> <li>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</li> <li>1.5.3 Interchange Schedules for the next 24 hours.</li> </ol> </li> <li>1.6. Area Control Error and frequency.                   <ol style="list-style-type: none"> <li>1.6.1 Instantaneous area control error.</li> <li>1.6.2 Clock hour area control error.</li> <li>1.6.3 System frequency at one or more locations in the Balancing Authority.</li> </ol> </li> </ol> </li> <li>2. Other operating information updated as soon as available.               <ol style="list-style-type: none"> <li>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</li> <li>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</li> <li>2.3. Forecast peak demand for current day and next day.</li> <li>2.4. Forecast changes in equipment status.</li> <li>2.5. New facilities in place.</li> <li>2.6. New or degraded special protection systems.</li> <li>2.7. Emergency operating procedures in effect.</li> <li>2.8. Severe weather, fire, or earthquake.</li> <li>2.9. Multi-site sabotage.</li> </ol> </li> </ol>	<p>New Technical Reference – in accordance with FERC Order 693, add the following to this list:</p> <ul style="list-style-type: none"> <li>▪ operational status of special protection systems</li> <li>▪ operational status of power system stabilizers</li> </ul>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-010-1 becomes effective, 'Attachment 1-TOP-005-0 Electric System Reliability Data' should be translated into a Technical Reference. This data is only a partial list of data and information that the Reliability Coordinator needs to support reliable operations. The reference should include the operational status of special protection systems and the operational status of power system stabilizers to comply with one of the FERC directives in Order 693.



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-006-1</b>  <b>R4.</b> Each <del>Reliability Coordinator</del>, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system’s near-term load pattern.</p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following:  <b>R1.1.</b> List of required data and information.  <b>R1.2.</b> Mutually agreeable format.  <b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).  <b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.   <b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.   <b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-006-1 R4 should be modified.</li> <li>▪ The information identified in TOP-006-1 R4 is not inclusive, and is addressed more globally for the Reliability Coordinator in IRO-010-1 R1 and R3.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Functions that Must Comply with the Requirements in the Standards**

Standard	Functions that Must Comply With the Requirements							
	Reliability Coordinator	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
IRO-008-1 Analyses & Assessments	X							
IRO-009-1 Actions to Operate within IROs	X							
IRO-010-1 Data Specification & Collection	X	X	X	X	X	X	X	X

**Effective Dates**

In those jurisdictions where no regulatory approval is required, the standards shall all become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standards shall all become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

# NERC

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards (IRO-008–IRO-10)

### Introduction

This implementation plan is associated with the following Interconnection Reliability Operating Limit (IROL) standards:

[IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments](#)

[IRO-009 — Reliability Coordinator Actions to Operate Within IROLs](#)

[IRO-010 — Reliability Coordinator Data Specification and Collection](#)

These three standards are “new” standards, not revisions to Version 0 standards. These standards do, however address some of the same topics as addressed in some of the Version 0 standards.

The ballot for each of the IROL standards includes the retirement of associated requirements from some already approved standards and effective dates identified in this implementation plan.

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Prerequisite Approvals

Reliability Standard FAC-014-1 — Establish and Communicate System Operating Limits, needs to be ~~effective~~approved by applicable regulatory authorities before this set of standards becomes effective:

~~IRO-007 — Monitoring the Wide Area~~

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

### Conforming Changes to Requirements in Already Approved Standards

Many elements contained in the set of proposed ‘Operate within IROL Standards’ address the same or similar performance objectives as requirements in already approved standards. To eliminate duplication and minimize confusion, the IROL SDT recommends that the retirement or revision of the following requirements in Version 0 Standards coincident with the implementation of~~should be revised or retired when~~ the proposed standards ~~are implemented~~. Justification for these revisions and retirements is provided in the tables on the following pages.

EOP-001-0 — Emergency Operations Planning

- Retire R2

IRO-002-1 — Reliability Coordination – Facilities

- Retire R2 ~~and R6~~

~~IRO-003-2 — Reliability Coordination — Wide Area View~~

- ~~Retire entire standard (R1 and R2)~~

IRO-004-1 — Reliability Coordination – Operations Planning

- Retire entire standard (R1 through R6)

IRO-005-2 — Reliability Coordination – Current Day Operations

- Retire ~~R1, convert most of R1 into a reference; retire~~ R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination

- Modify R1.2

TOP-005-1 — Operational Reliability Information

- Retire R1 and R1.1
- Convert Attachment 1 into a reference

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control

- Modify ~~R2 and~~ R4



**Revisions or Retirements to Already Approved Standards**

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

<p><b>Already Approved Standard</b> <i>(text in blue is recommended for retirement)</i></p>	<p><b>Proposed Replacement Requirement(s)</b></p>
<p><b>EOP-001-0</b> <b>R2.</b> The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.</p>	<p><b>IRO-009-1 R1.</b> <b>R1.</b> <u>For all IROLs identified one or more days prior to the current day, each</u>The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, <u>for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within T<sub>v</sub></u>, up to and including load shedding <u>that can be implemented in time to prevent exceeding those IROLs.</u></p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.</li> <li>▪ The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's T<sub>v</sub>, which can be shorter than 30 minutes.</li> </ul>	

<b>Already Approved Standard</b> <i>(text in blue is recommended for retirement)</i>	<b>Proposed Replacement Requirement(s)</b>
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**IRO-002-1**

**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.

**IRO-010-1**

**R1.** The Reliability Coordinator shall have a documented data specification for data ~~specify and collect the data~~ and information to build and maintain models ~~it needs~~ to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Time Assessments. The specification shall include the following:

R1.1. List of required data and information.

R1.2. Mutually agreeable format.

R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

R1.4. Process for data provision when automated Real-Time system operating data is unavailable.

**R2.** The Reliability Coordinator shall distribute its data specification to collect this data from the ~~entities performing functions~~ that have Facilities monitored by the Reliability Coordinator, and ~~to from~~ entities that provide Real-Time Facility status to the Reliability Coordinator. ~~This includes specifying and collecting data from the following:~~

~~R1.1 Balancing Authorities~~

~~R1.2 Generator Owners~~

~~R1.3 Generator Operators~~

~~R1.4 Interchange Authority~~

~~R1.5 Load-Serving Entities~~

~~R1.6 Reliability Coordinators~~

~~R1.7 Transmission Operators~~

~~R1.8 Transmission Owners~~

**Notes:**

- When IRO-010-1 becomes effective, IRO-002-1 R2 should be retired.
- IRO-010-1 ~~R1~~ requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed ~~requirements are~~ requirement is more explicit than the associated requirement in IRO-002-0.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-002-1</b></p> <p><del>R6. Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.</del></p>	<p><b>IRO-007-1</b></p> <p><del>R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</del></p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• When IRO-007-1 becomes effective, IRO-002-1 R6 should be retired.</li> <li>▪ IRO-002-1 R6 identifies some, but not all of the parameters to be monitored by the Reliability Coordinator and can be misleading. A list of elements to be monitored (from IRO-005-2) has been converted into a Technical Reference.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<b>Already Approved Standard</b>	<b>Proposed Replacement Requirement(s)</b>
<p><b>IRO-003-2</b></p> <p><del>R1. Each Reliability Coordinator shall monitor all Bulk Electric System facilities, which may include sub-transmission information, within its Reliability Coordinator Area and adjacent Reliability Coordinator Areas, as necessary to ensure that, at any time, regardless of prior planned or unplanned events, the Reliability Coordinator is able to determine any potential System Operating Limit and Interconnection Reliability Operating Limit violations within its Reliability Coordinator Area.</del></p> <p><del>R2. Each Reliability Coordinator shall know the current status of all critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation. Reliability Coordinators shall also know the status of any facilities that may be required to assist area restoration objectives.</del></p>	<p><b>IRO-007-1</b></p> <p><del>R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).</del></p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• <del>When IRO-007-1 becomes effective, IRO-003-2 should be retired.</del></li> <li>▪ <del>The Transmission Operator, not the Reliability Coordinator, is responsible for operating within System Operating Limits. The Reliability Coordinator is responsible for operating within IROLs.</del></li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> <i>(text in blue is recommended for retirement)</i></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p><b>R2.</b> Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p>	<p><b>IRO-008-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall perform <u>an</u> Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-004-1 R1 and R2 should be retired.</li> <li>▪ IRO-008 R1 requires the Reliability Coordinator to look at its 'Wide Area' rather than its 'Reliability Coordinator Area' in conducting its Operational Planning Analyses.</li> <li>▪ IRO-004-1 R2 is not measurable and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008 becomes effective.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> <i>(text in blue is recommended for retirement)</i></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R3.</b> Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.</p> <p><b>R6.</b> If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> <u>For all IROLs identified one or more days prior to the current day, each</u>The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, <del>for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within Tv</del> up to and including load shedding <u>that can be implemented in time to prevent exceeding those IROLs.-</u></p> <p><b>R2.</b> <u>For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's Tv.</u></p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.</li> <li>▪ IRO-009-1 R1 <del>and R2 require</del><u>requires</u> the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>▪ IRO-009-1 <del>R3 R2</del> includes language that is more explicit than the language in IRO-004-1 R6: ‘results of these studies’ is not as specific as ‘when an assessment of actual or expected system conditions’.</li> </ul>	

<p style="text-align: center;"><b>Already Approved Standard</b> <i>(text in blue is recommended for retirement)</i></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R4.</b> Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.</p> <p><b>R5.</b> Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.</p> <p><b>IRO-005-2</b></p> <p><b>R2.</b> Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: <del>(Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</del></p> <p><b>R1.1.</b> ___-List of required data and information.</p> <p><b>R1.2.</b> ___-Mutually agreeable format.</p> <p><b>R1.3.</b> ___-Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</p> <p><b>R1.4.</b> ___-Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R2.</b> <u>The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</u></p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>

**Notes:**

- When IRO-010-1 becomes effective, IRO-004-1 R4 and R5 should be retired.
- IRO-010-1 is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share. The periodicity for collecting the data is addressed in IRO-010-1 R1.3. Only a fraction of the reliability-related data needed by the Reliability Coordinator and shared by the Reliability Coordinator is addressed in IRO-004-1 R4 and R5.
- When IRO-010-1 becomes effective, IRO-005-2 R2 should be retired. The e-tag system replaced the need for this requirement. In addition, if the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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<b>Already Approved Standard</b> <i>(text in blue is recommended for retirement)</i>	<b>Proposed Replacement Requirement(s)</b>
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**IRO-005-2**

**R3.** As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.

**R5.** Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.

**IRO-009007-1**

**R1.** For all IROLs identified one or more days prior to the current day, each The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take up to and including load shedding, for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within  $T_v$ , up to and including load shedding that can be implemented in time to prevent exceeding those IROLs.

**R2.** For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ .

**R3.** When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.

**R3R4.** When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ .

**Notes:**

- When IRO-~~009008~~-1 becomes effective, IRO-005-2 ~~R3, and R5~~R1 should be retired.
- IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a T<sub>v</sub> that is much shorter than 30 minutes.
- IRO-005 R5 can lead the Compliance Enforcement Authority to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits. ~~and R1.4 through R1.10 should be converted into a Technical Reference. IRO-005-2 R1 is duplicated with IRO-007-1 R1. The list of parameters to monitor (IRO-005-2 R1.1 through R1.10) does not identify all parameters to monitor and can be misleading.~~

<p style="text-align: center;"><b>Already Approved Standard</b> <i>(text in blue is recommended for deletion)</i></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b> R9. The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del>, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-009-1</b> <b>R1.</b> <u>For all IROLs identified one or more days prior to the current day, each</u> <del>The</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, <del>for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within T<sub>v</sub></del>, up to and including load shedding <u>that can be implemented in time to prevent exceeding those IROLs.</u> <b>R2.</b> <u>For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>.</u> <b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL. <b>R4R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL <u>within the IROL's T<sub>v</sub>.</u></p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R9 should be modified.</li> <li>▪ IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul>	

<p style="text-align: center;"><b>Already Approved Standard</b> <i>(text in blue is recommended for deletion)</i></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b>  <b>R13.</b> Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.</p>	<p><b>IRO-009-1</b>  <b>R1.</b> <u>For all IROLs identified one or more days prior to the current day, each</u> The Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take, <del>for both prevention of exceeding IROLs and mitigation of instances of exceeding its IROLs within T<sub>v</sub></del>, up to and including load shedding <u>that can be implemented in time to prevent exceeding those IROLs.</u>  <b>R2.</b> <u>For each IROL that is identified one or more days prior to the current day, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>.</u>   <b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.   <b>R4R3.</b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL <u>within the IROL's T<sub>v</sub>.</u>   <b>IRO-007-4</b>  <b>R2.</b> If unanimity cannot be reached on the value for an IROL or its T<sub>v</sub>, all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values under consideration.</p>

**Notes:**

- When IRO-~~007-1~~ and IRO-009-1 becomes s effective, IRO-005-2 R13 should be retired.
- IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.
- The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-~~009007-1~~ R5R2 has a similar requirement that is applicable totally to the Reliability Coordinator and focused solely on IROLs.

<p style="text-align: center;"><b>Already Approved Standard</b></p> <p style="text-align: center;"><u>(text in blue is recommended for deletion or retirement – the red text is an addition to the text that already exists in the requirement)</u></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b></p> <p><b>R14.</b> Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view. The Transmission Service Providers shall respect <del>these</del> SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p><b>R16.</b> Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p><b>R17.</b> When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>	<p><b>IRO-009-1</b></p> <p><b><del>R3.R2.</del></b> When an assessment of actual or expected system conditions predicts that an IROL will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans to prevent exceeding that IROL.</p> <p><b><del>R4.R3.</del></b> When actual system conditions show that there is an instance of exceeding an IROL, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL <u>within the IROL's T<sub>v</sub>.</u></p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.</li> <li>▪ IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROLs – R14 implies that the Transmission Service Provider may respect ‘either’ SOLs or IROLs.</li> <li>▪ IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>▪ IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a T<sub>v</sub> that is much shorter than 30 minutes.</li> </ul>	

<p style="text-align: center;"><b><u>Already Approved Standard</u></b>                      (text in blue is recommended for deletion)<b>Version-0</b>  <b>Standards</b></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-003-0</b></p> <p><b>R1.</b> Generator Operators and Transmission Operators shall provide planned outage information.</p> <p style="padding-left: 40px;"><b>R1.1</b> Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p style="padding-left: 40px;"><b>R1.2</b> Each Transmission Operator shall provide outage information daily to <del>its Reliability Coordinator, and to</del> affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. <del>The Reliability Coordinator shall establish the outage reporting requirements.</del></p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: <del>(Risk Factor: Medium)</del>  <del>(Mitigation Time Horizons: Operations Planning)</del></p> <p style="padding-left: 40px;"><b>R1.1.</b> <del>___</del>—List of required data and information.</p> <p style="padding-left: 40px;"><b>R1.2.</b> <del>___</del>—Mutually agreeable format.</p> <p style="padding-left: 40px;"><b>R1.3.</b> <del>___</del>—Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</p> <p style="padding-left: 40px;"><b>R1.4.</b> <del>___</del>—Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R2.</b> <u>The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</u></p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-003-0 R1.2 should be modified.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to provide data to other Reliability Coordinators in accordance with the data specifications it has received from those other Reliability Coordinators. Daily outage data is one of the types of data that is expected to be identified on the Reliability Coordinator’s documented data specification since this is data needed to maintain real-time models.</li> </ul>	



<p style="text-align: center;"><b><u>Already Approved Standard</u></b>                      (text in blue is recommended for retirement)<b>Version-0</b>  <b>Standards</b></p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-005-1</b></p> <p><b>R1.</b> Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</p> <p><b>R1.1</b> Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments.  <u>The specification shall include the following: (Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)</u></p> <p><b>R1.1.</b> ___–List of required data and information.</p> <p><b>R1.2.</b> ___–Mutually agreeable format.</p> <p><b>R1.3.</b> ___–Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</p> <p><b>R1.4.</b> ___–Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R2.</b> <u>The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</u></p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-005-1 R1 and R1.1 should be retired.</li> <li>▪ Under IRO-010-1 each Reliability Coordinator must document what data and information it needs and entities must provide that data. The data needed by the Reliability Coordinator is needed for more than just reliability assessments – some of the data is used for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in R1 of TOP-005-1) have data and information needed by the Reliability Coordinator.</li> </ul>	



<p style="text-align: center;"><b><u>Already Approved Standard</u><del>Version 0 Standards</del></b></p>	<p style="text-align: center;"><b>Proposed Replacement</b></p>
<p><b>TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data</b></p> <p>This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.</p> <ol style="list-style-type: none"> <li>1. The following information shall be updated at least every ten minutes:               <ol style="list-style-type: none"> <li>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:                   <ol style="list-style-type: none"> <li>1.1.1 Status.</li> <li>1.1.2 MW or ampere loadings.</li> <li>1.1.3 MVA capability.</li> <li>1.1.4 Transformer tap and phase angle settings.</li> <li>1.1.5 Key voltages.</li> </ol> </li> <li>1.2. Generator data.                   <ol style="list-style-type: none"> <li>1.2.1 Status.</li> <li>1.2.2 MW and MVAR capability.</li> <li>1.2.3 MW and MVAR net output.</li> <li>1.2.4 Status of automatic voltage control facilities.</li> </ol> </li> <li>1.3. Operating reserve.                   <ol style="list-style-type: none"> <li>1.3.1 MW reserve available within ten minutes.</li> </ol> </li> <li>1.4. Balancing Authority demand.                   <ol style="list-style-type: none"> <li>1.4.1 Instantaneous.</li> </ol> </li> <li>1.5. Interchange.                   <ol style="list-style-type: none"> <li>1.5.1 Instantaneous actual interchange with each Balancing Authority.</li> <li>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</li> <li>1.5.3 Interchange Schedules for the next 24 hours.</li> </ol> </li> <li>1.6. Area Control Error and frequency.                   <ol style="list-style-type: none"> <li>1.6.1 Instantaneous area control error.</li> <li>1.6.2 Clock hour area control error.</li> <li>1.6.3 System frequency at one or more locations in the Balancing Authority.</li> </ol> </li> </ol> </li> <li>2. Other operating information updated as soon as available.               <ol style="list-style-type: none"> <li>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</li> <li>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</li> <li>2.3. Forecast peak demand for current day and next day.</li> <li>2.4. Forecast changes in equipment status.</li> <li>2.5. New facilities in place.</li> <li>2.6. New or degraded special protection systems.</li> <li>2.7. Emergency operating procedures in effect.</li> <li>2.8. Severe weather, fire, or earthquake.</li> <li>2.9. Multi-site sabotage.</li> </ol> </li> </ol>	<p>New Technical Reference – <a href="#"><u>in accordance with FERC Order 693, add the following to this list:</u></a></p> <ul style="list-style-type: none"> <li>▪ <a href="#"><u>operational status of special protection systems</u></a></li> </ul> <p><a href="#"><u>operational status of power system stabilizers</u></a></p>

**Notes:**

- When IRO-010-1 becomes effective, 'Attachment 1-TOP-005-0 Electric System Reliability Data' should be translated into a Technical Reference. This data is only a partial list of data and information that the Reliability Coordinator needs to support reliable operations. The reference should include the operational status of special protection systems and the operational status of power system stabilizers to comply with one of the FERC directives in Order 693.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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<p><b><u>Already Approved Standard</u></b> <small>(text in blue is recommended for deletion)</small><b>Version-0</b> <b>Standards</b></p>	<p><b>Proposed Replacement Requirement(s)</b></p>
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**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

**TOP-006-1**

~~R2. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load tap changer settings, and status of rotating and static reactive resources.~~

R4. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.

**IRO-007-1**

~~R1. The Reliability Coordinator shall perform Real-Time Monitoring of system operating parameters within its Wide Area to determine if operating parameters are within their associated Interconnection Reliability Operating Limits (IROLs).~~

**IRO-010-1**

R1. The Reliability Coordinator shall have a documented data specification for data and information to build and maintain models to support Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: ~~(Risk Factor: Medium) (Mitigation Time Horizons: Operations Planning)~~

R1.1. \_\_\_-List of required data and information.

R1.2. \_\_\_-Mutually agreeable format.

R1.3. \_\_\_-Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

R1.4. \_\_\_-Process for data provision when automated Real-Time system operating data is unavailable.

R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.

R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**Notes:**

- When IRO-~~007-1~~ and IRO-010-1 becomes effective, TOP-006-1 ~~R2 and~~ R4 should be modified.
- ~~The Reliability Coordinator's monitoring requirements are addressed more globally in IRO-007-1. The Reliability Coordinator may not have access to all the transmission data identified in TOP-006-1 R2.~~
- The information identified in TOP-006-1 R4 is not inclusive, and is addressed more globally for the Reliability Coordinator in IRO-010-1 R1 and R3.

**Functions that Must Comply with the Requirements in the Standards**

Standard	Functions that Must Comply With the Requirements							
	Reliability Coordinator	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
<del>IRO-007-1</del> Monitoring the Wide Area	X							
IRO-008-1 Analyses & Assessments	X							
IRO-009-1 Actions to Operate within IROs	X							
IRO-010-1 Data Specification & Collection	X	X	X	X	X	X	X	X

**Effective Dates**

~~In those jurisdictions where no regulatory approval is required, the~~The standards ~~shall~~should all become effective ~~on~~ the latter of ~~either April 1, 2009 or~~ the first day of the first ~~calendar~~ quarter, three months after ~~BOT adoption~~.

~~In those jurisdictions where regulatory approval is required, the standards shall all become regulatory approvals or coincident with the effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval date for FAC-014-1 — Establish and Communicate System Operating Limits.~~





## Comment Form for IROL Standards (IRO-008, IRO-009, IRO-010)

### Background Information:

The Interconnection Reliability Operating Limits Standards Drafting Team (IROL SDT) paused its work while waiting for a final ruling on the Facility Ratings Standards (FAC-010-1, FAC-011-1, and FAC-014-1). The FAC standards were approved by FERC at the end of 2007. Following that, the IROL SDT modified the set of IROL standards to conform to the latest guidelines for drafting standards. The compliance elements of the standard were modified to use the same language as used in the ERO Sanctions Guidelines, and Violation Severity Levels were modified to comply with the VSL Guidelines Criteria document developed by the VSL Drafting Team. In making these changes, the drafting team discovered opportunities to improve the set of standards by combining the set of requirements into a fewer number of standards, and by eliminating a requirement that was focused more on “how” than on “what”. The team also made some wording changes to improve the alignment between requirements, measures, and associated violation severity levels.

The drafting team encourages you to review the clean and redline versions of the standards and then to complete this comment form.

1. The drafting team eliminated IRO-007-1 Requirement R1, the requirement for the Reliability Coordinator to “monitor” its wide area. Monitoring is a “how” – staying within the IROLs is the “required performance.” Do you agree with this change?

- Yes  
 No  
 No comment

Comments:

2. The drafting team moved IRO-007-1 Requirement R2 (from IRO-007 R2 to IRO-009 R5), the requirement for the Reliability Coordinator to use the most conservative value under consideration when there is a disagreement amongst Reliability Coordinators on the value of an IROL or its  $T_v$ . This move seemed to put the related requirements together in a single standard and allowed the elimination of IRO-007. Do you agree with this change?

- Yes  
 No  
 No comment

Comments:

3. The drafting team modified the Violation Severity Levels for IRO-008. Do you agree with the new VSLs?

- Yes  
 No  
 No comment

Comments:

4. The drafting team modified IRO-009-1 R1 and R2 by replacing the phrase, “in advance of real-time” with the phrase, “one or more days prior to the current day” to clarify the intent and measurability of these requirements. Do you agree with the change made to R1 and R2 in IRO-009-1?

- Yes  
 No  
 No comment

Comments:

5. The drafting team modified the Violation Severity Levels for IRO-009. Do you agree with the new VSLs?

- Yes  
 No  
 No comment

Comments:

6. The drafting team modified the Violation Severity Levels for IRO-010. Do you agree with the new VSLs?

- Yes  
 No  
 No comment

Comments:

7. The drafting team modified the implementation plan to reflect the modifications made based on the elimination of IRO-007-1 Requirement R1. Do you agree with the modifications made to the implementation plan?

- Yes  
 No  
 No comment

Comments:

8. If you have any other comments on this set of standards that you haven't already provided, please provide them here.

Comments:

Operate Within Interconnection Reliability Operating Limits

[Registered Ballot Body](#) | [Related Files](#) | [Drafting Team Rosters](#)

**Status**

The NERC Board of Trustees will consider the IROL standards for adoption in October 2008.

**Purpose/Industry Need**

The purpose of this standard is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the bulk transmission system.

Proposed Standard	Supporting Materials	Comment Period	Comments Received	Response to Comments
<p><b>IRO-008-010</b> <b>Posted for a Board of Trustees Adoption</b> <b>October 2008</b></p> <p>IRO-008-IRO-010</p> <p>EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, TOP-006 <a href="#">Clean</a>   <a href="#">Redline</a> to last approval and posting</p> <p><b>(Same files as #48–51)</b></p>	<p>Implementation Plan <a href="#">Clean</a>   <a href="#">Redline</a> to last posting</p> <p><a href="#">FERC Directives in Order 693 Addressed in IROL Implementation Plan</a></p> <p><b>(Same files as #53–55)</b></p>			
<p><b>Announcement (67)</b></p> <p>IRO-008-010 Posted for a 10-day Recirculation Ballot Window</p> <p>IRO-008-IRO-010</p> <p>EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, TOP-006 <a href="#">Clean</a>   <a href="#">Redline</a> to last approval and posting</p> <p><b>(Same files as #48–51)</b></p>	<p>Implementation Plan <a href="#">Clean</a>   <a href="#">Redline</a> to last posting</p> <p><a href="#">FERC Directives in Order 693 Addressed in IROL Implementation Plan</a></p> <p><b>(Same files as #53–55)</b></p>	<p>08/12/08 – 08/21/08 (closed)</p> <p>10-day Recirculation Ballot</p>		<p><b>Announcement (68)</b></p> <p>Recirculation Ballot Results</p> <p><a href="#">IRO-008-1 (69)</a></p> <p><a href="#">IRO-009-1 (70)</a></p> <p><a href="#">IRO-010-1 (71)</a></p>

<p><a href="#">Announcement (56)</a></p> <p>Draft 10 Standards        IRO-008-010        Posted for a 10-day Ballot Window</p> <p>IRO-008-IRO-010  <a href="#">Clean</a>   <a href="#">Redline</a> to last posting</p> <p>EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, TOP-006  <a href="#">Clean</a>   <a href="#">Redline</a> to last approval</p> <p><b>(Same files as #48–51)</b></p>	<p>Implementation Plan  <a href="#">Clean</a>   <a href="#">Redline</a> to last posting</p> <p><a href="#">FERC Directives in Order 693 Addressed in IROL Implementation Plan</a></p> <p><b>(Same files as #53–55)</b></p>	<p>07/21/08 – 7/30/08        (closed)</p> <p>10-day Ballot Window</p>		<p><a href="#">Announcement (57)</a></p> <p>IRO-008-1 – <a href="#">Initial Ballot Results (58)</a></p> <p><a href="#">Ballot Comments (59)</a></p> <p><a href="#">Consideration of Ballot Comments (60)</a></p> <p>IRO-009-1 – <a href="#">Initial Ballot Results (61)</a></p> <p><a href="#">Ballot Comments (62)</a></p> <p><a href="#">Consideration of Ballot Comments (63)</a></p> <p>IRO-010-1 – <a href="#">Initial Ballot Results (64)</a></p> <p><a href="#">Ballot Comments (65)</a></p> <p><a href="#">Consideration of Ballot Comments (66)</a></p>
<p><a href="#">Announcement (52)</a></p> <p>Draft 10 Standards        IRO-008-010        Posted for a 30-day Pre-ballot Review</p> <p>IRO-008-IRO-010  <a href="#">Clean (50)</a>   <a href="#">Redline (51)</a> to last posting</p> <p>EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, TOP-006  <a href="#">Clean (48)</a>   <a href="#">Redline (49)</a> to last approval</p>	<p>Implementation Plan  <a href="#">Clean (53)</a>   <a href="#">(54) Redline</a> to last posting</p> <p><a href="#">FERC Directives in Order 693 Addressed in IROL Implementation Plan (55)</a></p>	<p>06/20/08 – 07/21/08        (closed)</p> <p>30-day Pre-ballot Review</p>		
<p><a href="#">Announcement (42)</a></p> <p>Draft 9 Standards        IRO-008-010        Posted for a 30-day Comment Period</p> <p>IRO-008-IRO-010  <a href="#">Clean (40)</a>   <a href="#">Redline (41)</a> to last posting</p> <p>EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, TOP-006  <a href="#">Clean (38)</a>   <a href="#">Redline (39)</a> to last</p>	<p>Implementation Plan  <a href="#">Clean (43)</a>   <a href="#">Redline (44)</a> to last posting</p>	<p>03/26/08 - 04/25/08        (closed)</p> <p><a href="#">Comment Form</a></p> <p><a href="#">Questions in Word Form (45)</a></p>	<p><a href="#">Comments (46)</a></p>	<p><a href="#">Consideration of Comments (47)</a></p>

approval				
<p><b>Announcement (35)</b></p> <p>Draft 8 Standards IRO-007-010 Posted for a 30-day Pre-ballot Review Period March 22 through April 20, 2007</p> <p>IRO-007-IRO-010 <b>Clean (33)   Redline (34)</b> to last posting</p> <p>EOP-001, IRO-002, IRO-003, IRO-004, IRO-005, TOP-003, TOP-005, TOP-006 <b>Clean (31)   Redline (32)</b> to last approval</p>	<p>Implementation Plan <b>Clean (36)  </b></p> <p><b>Redline (37)</b> to last posting</p>	<p>03/22/07 - 04/20/07</p> <p>Pre-ballot Review Closed</p>		
<p><b>Announcement (29)</b></p>		<p><b>Nomination Form (30)</b></p> <p>01/09/07 - 01/19/07 (closed)</p>		
<p><b>Announcement (24)</b></p> <p>Draft 7 Standards IRO-007-010 Posted for 45-day comment period January 2 through February 15, 2007</p> <p><b>IRO-007-IRO-010 (23)</b></p> <p>EOP-001, IRO-002, IRO-003, IRO-004, IRO-005, TOP-003, TOP-005, TOP-006 <b>redline to last approval (22)</b></p>	<p><b>Implementation Plan (25)</b></p>	<p><b>Comment Form (26)</b></p> <p>Comment Period 01/02/07 - 02/15/07 (Closed)</p>	<p><b>Comments (27)</b></p>	<p><b>Consideration of Comments (28)</b></p>
<p><b>Draft Standard Version 6 (21)</b></p>				
<p><b>Draft Standard Version 5 (20)</b></p>				
<p><b>Draft Standard Version 4 (17)</b></p> <p><b>Implementation Plan (16)</b></p> <p><b>Questions &amp; Answers (15)</b></p>		<p>03/01/04 - 04/14/04</p>	<p><b>Comments (18)</b></p>	<p><b>Response (19)</b></p>
<p><b>Draft Standard Version 2 (12)</b></p>		<p>07/01/03 - 08/29/03</p>	<p><b>Comments (13)</b></p>	<p><b>Response (14)</b></p>
<p><b>Draft Standard Version 1 - Short Version (9)</b></p> <p><b>Draft Standard Version 1 - Long Version (8)</b></p>		<p>02/18/03 - 04/02/03</p>	<p><b>Comments (10)</b></p>	<p><b>Response (11)</b></p>

Final Approved SAR (7)				
Draft SAR Version 2 (4)		08/20/02 - 09/23/02	Comments (5)	Response (6)
Draft SAR Version 1 (1)		04/02/02 - 05/03/02	Comments (2)	Response (3)

Standard	Related Files	Ballot Period
Standard for Ballot (13a) - Version 3	<ul style="list-style-type: none"> <li>▪ Implementation Plan (13b)</li> <li>▪ Interconnection Reliability Operating Limit Violation Report (13c)</li> <li>▪ Questions &amp; Answers (13d)</li> </ul>	December 18, 2003 - January 6, 2004 Ballot Results (13e)  Response (13f)

### Comments on draft 9 IROL Standards — IRO-008–010 — Pre-2006

The IROL Standard Drafting Team thanks all commenter's who submitted comments on draft 9 of the Interconnection Reliability Operating Limit standards. These standards were posted for a 30-day public comment period from March 26, 2008 through April 25, 2009. The stakeholders were asked to provide feedback on the SAR through a special Standard Comment Form.

<http://www.nerc.com/~filez/standards/IROL.html>

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedures:  
<http://www.nerc.com/standards/newstandardsprocess.html>.

## Index to Questions, Comments, and Responses

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7.	The drafting team modified the implementation plan to reflect the modifications made based on the elimination of IRO-007-1 Requirement R1. Do you agree with the modifications made to the implementation plan?.....	23
8.	If you have any other comments on this set of standards that you haven’t already provided, please provide them here?.....	32



Consideration of Comments on Draft 9 of IROL Standards — Pre-2006

Individual or group.	Name	Organization/Group	Registered Ballot body segment (check all industry segments in which your company is registered)																																																																																	
Individual	Rick White	Northeast Utilities	1 - Transmission Owners																																																																																	
Group	Guy V. Zito	NPCC Regional Standards Committee, RSC	10 - Regional Reliability Organizations/Regional Entities	<table border="1"> <thead> <tr> <th>Additional Member</th> <th>Additional Organization</th> <th>Region</th> <th>Segment Selection</th> <th></th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Ralph Rufrano</td> <td>New York Power Authority</td> <td>NPCC</td> <td>5</td> </tr> <tr> <td>2.</td> <td>Michael Gildea</td> <td>Constellation Energy</td> <td>NPCC</td> <td>6</td> </tr> <tr> <td>3.</td> <td>William DeVries</td> <td>New York Independent System Operator</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>4.</td> <td>Nabil Hitti</td> <td>National Grid</td> <td>NPCC</td> <td>3, 4</td> </tr> <tr> <td>5.</td> <td>Brian Gooder</td> <td>Ontario Power Generation, Inc.</td> <td>NPCC</td> <td>5</td> </tr> <tr> <td>6.</td> <td>Brian Evans-Mongeon</td> <td>Utility Services</td> <td>NPCC</td> <td>6</td> </tr> <tr> <td>7.</td> <td>Kathleen Goodman</td> <td>ISO - New England</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>8.</td> <td>Ron Falsetti</td> <td>Independent Electricity System Operator</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>9.</td> <td>David Kiguel</td> <td>Hydro One Networks, Inc.</td> <td>NPCC</td> <td>1</td> </tr> <tr> <td>10.</td> <td>Don Nelson</td> <td>Massachusetts Dept. of Public Utilities</td> <td>NPCC</td> <td>9</td> </tr> <tr> <td>11.</td> <td>Ed Thompson</td> <td>Consolidated Edison Co. of New York, Inc.</td> <td>NPCC</td> <td>1</td> </tr> <tr> <td>12.</td> <td>Ron Hart</td> <td>Dominion Resources, Inc.</td> <td>NPCC</td> <td>5</td> </tr> <tr> <td>13.</td> <td>Sylvain Clermont</td> <td>Hydro-Quebec TransEnergie</td> <td>NPCC</td> <td>1</td> </tr> <tr> <td>14.</td> <td>Randy MacDonald</td> <td>New Brunswick System Operator</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>15.</td> <td>Roger Champagne</td> <td>Hydro-Quebec TransEnergie</td> <td>NPCC</td> <td>2</td> </tr> </tbody> </table>	Additional Member	Additional Organization	Region	Segment Selection		1.	Ralph Rufrano	New York Power Authority	NPCC	5	2.	Michael Gildea	Constellation Energy	NPCC	6	3.	William DeVries	New York Independent System Operator	NPCC	2	4.	Nabil Hitti	National Grid	NPCC	3, 4	5.	Brian Gooder	Ontario Power Generation, Inc.	NPCC	5	6.	Brian Evans-Mongeon	Utility Services	NPCC	6	7.	Kathleen Goodman	ISO - New England	NPCC	2	8.	Ron Falsetti	Independent Electricity System Operator	NPCC	2	9.	David Kiguel	Hydro One Networks, Inc.	NPCC	1	10.	Don Nelson	Massachusetts Dept. of Public Utilities	NPCC	9	11.	Ed Thompson	Consolidated Edison Co. of New York, Inc.	NPCC	1	12.	Ron Hart	Dominion Resources, Inc.	NPCC	5	13.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1	14.	Randy MacDonald	New Brunswick System Operator	NPCC	2	15.	Roger Champagne	Hydro-Quebec TransEnergie	NPCC	2
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Group	Linda Perez	RCCWG - reliability coordinator																																																																																		

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Individual or group.	Name	Organization/Group	Registered Ballot body segment (check all industry segments in which your company is registered)					
		comments working group						
Individual	Craig McLean	Manitoba Hydro	1 - Transmission Owners, 3 - Load-serving Entities, 6 - Electricity Brokers, Aggregators , 5 - Electric Generators					
Group	Robert Rhodes	Operating Reliability Working Group	2 - RTOs and ISOs, 3 - Load-serving Entities, 5 - Electric Generators, 1 - Transmission Owners	Additional Member	Additional Organization	Region	Segment Selection	
				1.	Brian Berkstresser	Empire District Electric	SPP	1, 3, 5
				2.	Mike Gammon	Kansas City Power and Light	SPP	1, 3, 5
				3.	Allen Klassen	Westar Energy	SPP	1, 3, 5
				4.	Danny McDaniel	CLECO	SPP	1, 3, 5
				5.	Kyle McMenamin	Southwestern Public Service	SPP	1, 3, 5
				6.	Robert Rhodes	Southwest Power Pool	SPP	2
Group	Melinda Montgomery	SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	1 - Transmission Owners, 3 - Load-serving Entities	Additional Member	Additional Organization	Region	Segment Selection	
				1.	Gregory Rowland	Duke Energy Carolinas	SERC	1, 3
				2.	Sam Holeman	Duke Energy Carolinas	SERC	1, 3
				3.	Stuart Goza	Central Sub-region Reliability Coordinator (TVA)	SERC	1, 3, 9
				4.	Robert Thomasson	Big Rivers Electric Coop.	SERC	1, 3
				5.	Dan Jewell	Louisiana Generating, LLC	SERC	1, 3, 4
6.	Rene' Free	Santee Cooper	SERC	1,				

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				7. Glenn Stephens Santee Cooper SERC 1, 3, 9																																													
				8. Louis Slade Dominion Virginia Power SERC 3, 5, 6																																													
				9. Danny Dees Municipal Electric Authority of GA SERC 1, 3																																													
				10. Steve Corbin Southeastern Sub-region Reliability Coordinator (Southern Company) SERC 1, 3																																													
				11. Raymond Vice Southern Company SERC 1, 3																																													
				12. Jim Case Entergy Services, Inc. SERC 1, 3																																													
				13. Jim Griffith Southern Company SERC 1, 3																																													
				14. George Carruba East Kentucky Power Cooperative SERC 1, 3, 5																																													
Individual	Randy Schimka	San Diego Gas and Electric Co.	5 - Electric Generators, 3 - Load-serving Entities, 1 - Transmission Owners																																														
Individual	Ron Falsetti	Ontario IESO	2 - RTOs and ISOs																																														
Group	Charles Yeung	ISO RTO Council Standards Review Committee	2 - RTOs and ISOs	<table border="1"> <thead> <tr> <th></th> <th>Additional Member</th> <th>Additional Organization</th> <th>Region</th> <th>Segment Selection</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Patrick Brown</td> <td>PJM</td> <td>RFC</td> <td>2</td> </tr> <tr> <td>2.</td> <td>Jim Castle</td> <td>NYISO</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>3.</td> <td>Ron Falsetti</td> <td>IESO</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>4.</td> <td>Matt Goldberg</td> <td>ISO NE</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>5.</td> <td>Brent Kingsford</td> <td>CAISO</td> <td>WECC</td> <td>2</td> </tr> <tr> <td>6.</td> <td>Anita Lee</td> <td>AESO</td> <td>WECC</td> <td>2</td> </tr> <tr> <td>7.</td> <td>Steve Myers</td> <td>ERCOT</td> <td>ERCOT</td> <td>2</td> </tr> <tr> <td>8.</td> <td>Bill Phillips</td> <td>MISO</td> <td>RFC</td> <td>2</td> </tr> </tbody> </table>		Additional Member	Additional Organization	Region	Segment Selection	1.	Patrick Brown	PJM	RFC	2	2.	Jim Castle	NYISO	NPCC	2	3.	Ron Falsetti	IESO	NPCC	2	4.	Matt Goldberg	ISO NE	NPCC	2	5.	Brent Kingsford	CAISO	WECC	2	6.	Anita Lee	AESO	WECC	2	7.	Steve Myers	ERCOT	ERCOT	2	8.	Bill Phillips	MISO	RFC	2
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Group	Doug Hohlbaugh	FirstEnergy	3 - Load-serving Entities, 5 -	<table border="1"> <thead> <tr> <th></th> <th>Additional Member</th> <th>Additional Organization</th> <th>Region</th> <th>Segment Selection</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Additional Member	Additional Organization	Region	Segment Selection																																								
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6.	Sam Ciccone	FE	RFC																									
Individual	Alessia Dawes	Hydro One Networks	3 - Load-serving Entities, 1 - Transmission Owners																									
Individual	Kathleen Goodman	ISO New England Inc	2 - RTOs and ISOs																									
Individual	Jason Shaver	American Transmission Company LLC	1 - Transmission Owners																									

**Consideration of Comments on Draft 9 of IROL Standards — Pre-2006**

1. The drafting team eliminated IRO-007-1 Requirement R1, the requirement for the Reliability Coordinator to “monitor” its wide area. Monitoring is a “how” – staying within the IROLs is the “required performance.” Do you agree with this change?

Organization/Group	Question 1:	Question 1 Comments:
Northeast Utilities	Yes	
NPCC Regional Standards Committee, RSC	Yes	
Hydro-Québec TransEnergie	Yes	
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group		
Manitoba Hydro	Yes	
Operating Reliability Working Group	Yes	
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	
San Diego Gas and Electric Co.	Yes	
Ontario IESO	No	The IESO agrees that monitoring is implicit in this set of standards given the RC is held responsible for operating the system within IROLs, and taking corrective actions to prevent and mitigate instances where an SOL or IROL is (or expected to be) exceeded. Nonetheless, the requirement to monitor drives the need for other standards, such as communication and provision of monitoring facilities. Its removal may leave a void in this aspect. We suggest the Standard Drafting Team consider the impact of removing this requirement on the other standards.
ISO RTO Council Standards Review Committee	No	On the one hand, the IRC agrees that monitoring is implicit in this set of standards given the RC is held responsible for operating the system within IROLs, and taking corrective actions to prevent and mitigate instances where an SOL or IROL is (or expected to be) exceeded. Nonetheless, the requirement to monitor drives the need for other standards, such as communication and provision of monitoring facilities. Its removal

Consideration of Comments on Draft 9 of IROL Standards — Pre-2006

Organization/Group	Question 1:	Question 1 Comments:
		may leave a void in this aspect. We are therefore unable to indicate a preference. We suggest the Standard Drafting Team consider the impact of removing this requirement on other standards.
FirstEnergy	Yes	
Hydro One Networks	Yes	We believe it is ok to eliminate IRO-007-1 R1, as IRO-008-1 R2 requiring the RC to perform "Real-Time Assessments" (every 30 minutes) to determine if any IROL is exceeded, covers off the intent of IRO-007-1 R1. In addition, IRO-008-1 R2 has, at a minimum, a Violation Risk Factor and Time Horizon at least equal to or stricter than IRO-007-1 R1.
ISO New England Inc	No	We understand that monitoring is implicit in this set of standards given the RC is held responsible for operating the system within IROLs, and taking corrective actions to prevent and mitigate instances where an SOL or IROL is (or expected to be) exceeded. Nonetheless, the requirement to monitor drives the need for other standards, such as communication and provision of monitoring facilities. Its removal may leave a void in this aspect. We suggest the SDT consider the ramifications of removing this requirement on other standards.
American Transmission Company LLC	Yes	ATC is okay with dropping IRO-007 R1 because it is covered in IRO-002-1 R5 and R6. IRO-002-1 R5 and R6 require the RC to monitor BES elements that could result in SOL or IROL violations.

**Consideration of Comments on Draft 9 of IROL Standards — Pre-2006**

- The drafting team moved IRO-007-1 Requirement R2 (from IRO-007 R2 to IRO-009 R5), the requirement for the Reliability Coordinator to use the most conservative value under consideration when there is a disagreement amongst Reliability Coordinators on the value of an IROL or its  $T_v$ . This move seemed to put the related requirements together in a single standard and allowed the elimination of IRO-007. Do you agree with this change?

<b>Organization/Group</b>	<b>Question 2:</b>	<b>Question 2 Comments:</b>
Northeast Utilities	Yes	Please define $T_v$ in the standard.
NPCC Regional Standards Committee, RSC	Yes	
Hydro-Québec TransEnergie	Yes	
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	Yes	
Manitoba Hydro	Yes	
Operating Reliability Working Group	Yes	
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	
San Diego Gas and Electric Co.	Yes	
Ontario IESO	Yes	
ISO RTO Council Standards Review Committee	Yes	
FirstEnergy	Yes	
Hydro One Networks	Yes	Since IRO-007-1 R2 describes an action with respect to IROLs, it is appropriate to move that requirement to the IRO-009-1 standard Reliability Coordinator Actions to Operate within IROLs. In addition, the VRF, Time Horizon and VSL (severe) have all been kept the same. Therefore elimination of IRO-007-1 is also appropriate

Consideration of Comments on Draft 9 of IROL Standards — Pre-2006

Organization/Group	Question 2:	Question 2 Comments:
		at this time.
ISO New England Inc	Yes	
American Transmission Company LLC	Yes	



**Consideration of Comments on Draft 9 of IROL Standards — Pre-2006**

3. The drafting team modified the Violation Severity Levels for IRO-008. Do you agree with the new VSLs?

<b>Organization/Group</b>	<b>Question 3:</b>	<b>Question 3 Comments:</b>
Northeast Utilities	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis.
NPCC Regional Standards Committee, RSC	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis.
Hydro-Québec TransEnergie	No	HQT agree with the changes to the VSLs for R2 and R3, but is unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis.
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	No	R2 - does this real time assessment only mean state estimator or if state estimator is unavailable, can the RC use other tools to make a real time assessment to meet this requirement? If we can not use other tools then we do not agree with the VSL. If we can use other tools, then we agree with the VSL.
Manitoba Hydro	Yes	
Operating Reliability Working Group	No	As proposed the VSLs do not allow any Real-time Assessments to be missed within a 24-hour period. However, in EOP-008-0, R1.8, the Reliability Coordinator is allowed a one-hour transition period to its backup site. It would seem appropriate that an allowance should be made for this transition in the VSLs for R2.
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	No	We feel that the Violation Severity Levels for IRO-008-1, R2, if applied as currently proposed, are unduly restrictive in measuring the impact of violating the requirement to run a real-time assessment every thirty (30) minutes for the following reasons: 1. During a large portion of the time, system conditions do not change within a thirty (30) minute period and the risk to the interconnection is not the same for every thirty (30) minute period. When violations are not commensurate with the risk to the Interconnection or where there is no real harm, the penalties should be waived or reduced accordingly. Another way of saying this is that the Violation Severity Level and measurement criteria of IRO-008-1 do not measure the potential risk to the interconnection due to violation of these criteria. In fact, no strictly time based criteria can. The best criteria would be the

Organization/Group	Question 3:	Question 3 Comments:
		<p>determination of risk to the interconnection (or change in the level of risk in a positive or higher risk direction) that was not properly detected and acted upon by the Reliability Coordinator. One potential way that this could actually be measured during "after the fact audits" is by choosing a set of specific occurrences during the previous year that impacted interconnection reliability within the RC area and reviewing the RC's documented responses to them. This would greatly enhance the ability of auditors to measure actual RC performance rather than just measuring how often the RC went through the motions of performing an analysis. 2. The requirements do not allow for scheduled maintenance or unplanned down time of EMS systems, thereby requiring a perfect compliance performance for 17,520 study periods in a year. This doesn't allow for any down time for EMS or assessment applications (State Estimator) and this imposes impossible criteria on EMS operations and guarantees that every system will have one or more violations each year. This places an emphasis on or actually measures the performance of tools rather than on the performance of the Reliability Coordinators<sup>3</sup>. The drafting team may want to seriously reconsider the thirty (30) minute requirement for running real time assessments. Hourly assessments would be more practical for assessing system conditions and for compliance requirements. Systems generally conduct continuous assessments during peak load or abnormal conditions and Reliability Coordinators and Operators should be allowed the flexibility to make reasoned judgments based on their knowledge of the system during normal conditions or during failures of assessment tools. Our support for an hourly interval is also based upon the recommendations of the NERC Real-time Tools Best Practices Task Force. On pages 156-158 of section 2 of their report, the RTBPTF proposes that a new requirement for "look-ahead analyses" be added to standards TOP-002 and IRO-004. Since IRO-008 is intended to replace IRO-004, the recommendation is applicable to IRO-008. Specifically, the recommendation as it pertains to RCs is paraphrased as follows: In order to assess approaching IROL violations, each Reliability Coordinator shall, at a minimum, perform one-hour-ahead Power Flow simulations during the following: + Occurrence of critical system event + Extreme load conditions + Large power transactions + Major planned outages. This recommended requirement would address the "expected" system conditions component of the proposed (and so-called) "Real Time" Assessment. The "existing" system conditions component should be covered by requirements for monitoring found elsewhere in the standards. The rationale for the RTBPTF recommendation came from a deficiency identified in the Blackout Report. Specifically, the report stated: "FE did not perform adequate hour-ahead operations planning studies after Eastlake 5 tripped off-line at 13:31 to ensure that FE could maintain a 30-minute response capability for the next contingency. The FE system was not within single contingency limits from 15:06 to 16:06. In addition to day-ahead planning, the system should have been restudied after the forced outage of Eastlake 5."The recommendation is supported by the findings of the RTBPTF based upon responses received from the task force's survey of RCs and TOPs. The survey showed that 47% of all respondents performed look-ahead studies at intervals less than one hour, and 80% perform such studies at intervals from one hour to one day. Also, 83% of the respondents perform these studies as needed. The survey results indicate that performing look-ahead studies when needed on at least an hourly basis is a prevailing practice. We suggest that the</p>

Consideration of Comments on Draft 9 of IROL Standards — Pre-2006

Organization/Group	Question 3:	Question 3 Comments:
		Standards Drafting Team work with the RTBPTF to incorporate their recommendation into IRO-008 in lieu of the proposed requirement R2.) We are also concerned about the requirements for evidence to validate compliance with the IRO-008-1 Standard as well as other standards. The compliance program seems to define the window of compliance being the 3 years between compliance audits. However, the IRO-008-1 standard only requires data be retained to demonstrate compliance for a rolling 30 day period. There appears to be a disconnect between the compliance program and the standard, which exposes the Reliability Coordinators to being found non-compliant. In other words, there appears to be a considerable window of time between an audit and the previous audit during which an entity would not have data to demonstrate that they met compliance expectations.] In many cases, the data retention sections in individual standards talk about a much shorter data retention expectation. For example, IRO-008-1 states, "The Reliability Coordinator shall retain evidence for Requirement R1, Measure M1 and Requirement R2, Measure M2 for a rolling 30 days. The Reliability Coordinator shall keep evidence for Requirement R3, Measure M3 for a rolling three months. The question is which data retention expectation is the entity going to be held to with regards to compliance and compliance audits? More clarity needs to be provided on what evidence must be provided in audits.
San Diego Gas and Electric Co.	Yes	
Ontario IESO	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This question also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis. We asked the SDT to extend the sampling period to 12 months in accordance with the general understanding of the time frame for operations planning.
ISO RTO Council Standards Review Committee	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This question also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis. We ask the SDT to extend the sampling period to 12 months in accordance with the general understanding of the time frame for operations planning.
FirstEnergy	Yes	You may want to remove the parenthetical reference to the requirement numbers at the end of each VSL. This is not needed since the requirement number is shown in the VSL table in column 1.
Hydro One Networks	No	For VSL requirement R1 we suggest the following: High: Missed performing an Operational Planning Analysis that covers all aspects of the requirement for one of 30 days; Severe: Missed performing an Operational Planning Analysis that covers all aspects of the requirement for two or more of 30 days. As well, for VSL

Consideration of Comments on Draft 9 of IROL Standards — Pre-2006

Organization/Group	Question 3:	Question 3 Comments:
		requirement R2 we suggest changing the phrase "within a 24-hour period" to "within a 30-day period". This will prevent daily occurrences of violations.
ISO New England Inc	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This question also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours as being the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis. We ask the SDT to extend the sampling period to 12 months in accordance with the general understanding of the time frame for operations planning.
American Transmission Company LLC	Yes	

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4. The drafting team modified IRO-009-1 R1 and R2 by replacing the phrase, “in advance of real-time” with the phrase, “one or more days prior to the current day” to clarify the intent and measurability of these requirements. Do you agree with the change made to R1 and R2 in IRO-009-1?

<b>Organization/Group</b>	<b>Question 4:</b>	<b>Question 4 Comments:</b>
Northeast Utilities	No	We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
NPCC Regional Standards Committee, RSC	No	We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
Hydro-Québec TransEnergie	No	HQT understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	Yes	
Manitoba Hydro	Yes	
Operating Reliability Working Group	Yes	
SERC OC	Yes	

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Organization/Group	Question 4:	Question 4 Comments:
Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1		
San Diego Gas and Electric Co.	Yes	
Ontario IESO	No	We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hour prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
ISO RTO Council Standards Review Committee	No	We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", with the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
FirstEnergy	No	It should be clear that the main intent is to have IROL mitigation plans in place for the current operating day. For clarity, we suggest the following replacements for requirements R1 and R2.R1 For the current day operating conditions, each Reliability Coordinator shall have Operating Processes, Procedures or Plans that identify mitigation actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding any of its IROL conditions. The mitigation actions shall be available one or more days prior to the current operating day.R2 For the current day operating conditions, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify mitigation actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding any of its IROL conditions, such that the IROL is relieved within the IROL's Tv. The mitigation actions shall be available one or more days prior to the current operating day.
Hydro One Networks	Yes	
ISO New England Inc	No	With this change one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time," which (we believe) is not the intent. We therefore suggest the "in advance of real-time" be replaced with "one or more hours prior to real-time", with real-time being defined as the current hour.

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Organization/Group	Question 4:	Question 4 Comments:
American Transmission Company LLC	Yes	ATC agrees that the phrase "one or more days prior to the current day" provides additional clarity.

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5. The drafting team modified the Violation Severity Levels for IRO-009. Do you agree with the new VSLs?

<b>Organization/Group</b>	<b>Question 5:</b>	<b>Question 5 Comments:</b>
Northeast Utilities	No	We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform either one, its violation is deemed to be high. If it fails to perform both, then it is deemed to have fully violated the requirement which is severe.
NPCC Regional Standards Committee, RSC	No	We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform either one, its violation is deemed to be high. If it fails to perform both, then it is deemed to have fully violated the requirement which is severe.
Hydro-Québec TransEnergie	No	HQT agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform either one, its violation is deemed to be high. If it fails to perform both, then it is deemed to have fully violated the requirement which is severe.
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	No	R4 High- in the VSL does "acting and directing" include contacting the entity and gathering information and data or does it strictly mean issuing a directive?R5 Severe - eliminate the top VSL, this describes how a failure to mitigate occurred, the issue is there was a failure to mitigate. Also, if an RC issues a directive to mitigate an IROL and the entity fails to comply or is unable to comply is the RC in violation of this requirement?
Manitoba Hydro	Yes	
Operating Reliability Working Group	No	The High VSL for R4 contains an additional requirement that is not in R4. The VSL defines 'without delay' as being five minutes or less. The 'five minute' requirement should be deleted from the VSL.
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	No	The Violation Security Levels for R3 and R4 impose additional requirements that are not in the standard. For R3, it seems inappropriate that the Violation Severity Level should be based upon the effectiveness of the plan to prevent the system from entering an IROL in real-time. The dynamics topology and unit commitment/dispatch of an electric system are constantly changing and no specific occurrence of an SOL or IROL can be accurately represented in planning case studies. It is thus impractical or impossible to devise a perfect process for mitigating each and every instance during which a known IROL may manifest and persist



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Organization/Group	Question 5:	Question 5 Comments:
		<p>as conditions change during the IROL Tv. In R4, if the trigger limit for initiating action is five (5) minutes, then that limit should be explicitly included in the requirements and not introduced for the first time in the measurement criteria. Furthermore, we feel that a time of five (5) minutes is arbitrary and implementation of correct action is the primary requirement. Operators will be under tremendous pressure to work out a solution when an IROL is exceeded and satisfy the five minute requirement. We feel that it is more important to 1) recognize that an IROL has been violated, 2) determine the correct process or procedure required to mitigate the identified IROL, 3) modify the identified generic process or procedure to meet specific real time system conditions as required and, 4) implement the modified process or procedure while at the same time maintaining continuous communications with all parties involved and simultaneously documenting actions being taken as required for NERC audits. It is not clear to us exactly how the five (5) minute trigger adds any value to this process. If the goal is to mitigate the IROL within the IROL Tv, and the actions are successful, what impact does a five (5) minute trigger requirement add to the process? WE STRONGLY SUGGEST THAT THE "HIGH" SEVERITY LEVEL SHOULD BE ELIMINATED FOR R3 AND R4.</p>
San Diego Gas and Electric Co.	Yes	
Ontario IESO	No	<p>We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a) take actions without delay (within 5 minutes) and b) correct the situation of IROL being exceeded. Hence, if an RC fails to perform one of the two requirements, its violation is deemed to be High. If it fails to perform both, then it is deemed to have fully violated the requirement and hence should be deemed a Severe violation.</p>
ISO RTO Council Standards Review Committee	No	<p>We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC who did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform one of the two requirements, its violation is deemed to be High. If it fails to perform both, then it is deemed to have fully violated the requirement and hence should be deemed a Severe violation.</p>
FirstEnergy	Yes	<p>For R4, Severe VSL - We recommend retaining only the text below the "OR" statement. The text above is duplicative and adds no additional value since the end result is that the IROL is not mitigated within the allowable Tv timeframe.</p>
Hydro One Networks	No	<p>We agree with the VSLs for requirements 1 and 2. However the high VSL for requirement 3 is not appropriate because it tries to judge the effectiveness of the Operating Processes, Procedures or Plans. Requirement 4 provides for judgment of the effectiveness of the Processes, Procedures or Plans on a basis of being able to</p>

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Organization/Group	Question 5:	Question 5 Comments:
		mitigate the exceeded IROL within the its Tv. As well, R4 includes two requirements: 1) act or direct, without delay, to mitigate the instance of exceeding the IROL; 2) mitigate this instance within the Tv. We suggest that if the RC does not meet both requirements the violation level should be severe and if the RC does not meet one of the requirements the violation level should be high.
ISO New England Inc	No	We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC who did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and b. correct the situation of IROL being exceeded. Hence, if an RC fails to perform one of the two requirements, its violation is deemed to be High. If it fails to perform both, then it is deemed to have fully violated the requirement and hence should be deemed a Severe violation.
American Transmission Company LLC	No	Severe VSL for R4ATC does not agree with the language in the Severe VSL for Requirement 4. The purpose of this VSL is for a Tv violation. ATC recommends that the first description be deleted and only the second description be kept. If the SDT does not agree they should provide a reason for the two descriptions.

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6. The drafting team modified the Violation Severity Levels for IRO-010. Do you agree with the new VSLs?

<b>Organization/Group</b>	<b>Question 6:</b>	<b>Question 6 Comments:</b>
Northeast Utilities	Yes	
NPCC Regional Standards Committee, RSC	Yes	
Hydro-Québec TransEnergie	Yes	
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	No	What is the expectation for the process when your automated data is not available? Does freezing the State Estimator value and then getting data via phone and fax suffice?
Manitoba Hydro	No	R1 - What constitutes a "complete data specification"? TOP-005-0 Attachment 1, which will become a Technical Reference, needs a tune up. What is the determining factors when identifying transmission and other facilities as "key"? What size of generator is the RC concerned with in regards to on/off status, AVR status, PPS status, MW & Mvar output?
Operating Reliability Working Group	No	The Lower and Moderate VSLs for R1 should be reversed. We believe that it is more important to have a process for obtaining real-time operating data when it becomes unavailable than having the data in the wrong format. At least you have the data.
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	
San Diego Gas and Electric Co.	No	In the revised IRO-010 Violation Severity Levels Table, there is no provision for less than 100% compliance for real-time data sent by the TO/TOP to the RC. Providing data at a level greater than 95% but less than 100% is cause for a "Lower" Violation Severity Level. That level rises as less data is provided, to a maximum of "Severe" when less than 75% of the requested data is sent to the RC. Real time data typically has some level of availability associated with it that allows for the inherent nature of real time data being less than 100% complete. Examples may include the failure of field equipment such as RTUs, communication circuits, instrumentation, and other events that could impact 100% data availability such as missed RTU scans, loss of data when systems are being shifted to backup EMS systems, etc. Requirement R3 and the Violation Severity Level Violation table need to be re-written to correlate with Requirement 1.4 that would include an exemption for short-term real time data failures or outages when determining the Violation Severity Level, perhaps with

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Organization/Group	Question 6:	Question 6 Comments:
		language such as "excluding unavailable real-time data (R1.4)."
Ontario IESO	Yes	
ISO RTO Council Standards Review Committee	Yes	
FirstEnergy	Yes	
Hydro One Networks	No	We agree with VSLs for R2 and R3 however, we disagree with the VSLs for R1. Example, failing to specify a process for data provision when the automated Real-time system operating data is unavailable could result in the RC being "blind" to what is going on in the system and render them unable to act or direct others to act. We suggest that missing any one of R1's sub-requirements is a High VSL and having no data specification is a Severe VSL.
ISO New England Inc	Yes	
American Transmission Company LLC	No	VSL for R3: The VSLs do not seem to take into account the frequency of not sending the data. The SDT should provide additional detail within each VSL. How will the percentage be determined over time?

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7. The drafting team modified the implementation plan to reflect the modifications made based on the elimination of IRO-007-1 Requirement R1. Do you agree with the modifications made to the implementation plan?

Organization/Group	Question 7:	Question 7 Comments:
Northeast Utilities	No	<p>We agree with some but not all of the proposed changes to the other standards. (1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.(2) IRO-002 R2: We agree with retiring this requirement.(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to be incorporated in an appropriate standard. (4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." R13 actually contains two requirements that are not covered by the new IRO-009: (a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change. (b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence. (5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change. (6) TOP-005-1? Operational Reliability Information: Retire R1 and</p>

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Organization/Group	Question 7:	Question 7 Comments:
		<p>R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 and R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference. (7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.</p>
<p>NPCC Regional Standards Committee, RSC</p>	<p>No</p>	<p>We agree with some but not all of the proposed changes to the other standards. (1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.(2) IRO-002 R2: We agree with retiring this requirement.(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to be incorporated in an appropriate standard. (4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." R13 actually contains two requirements that are not covered by the new IRO-009: (a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change. (b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove</p>

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Organization/Group	Question 7:	Question 7 Comments:
		<p>"Reliability Coordinator and its" from the second sentence. (5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change. (6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 and R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference. (7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.</p>
<p>Hydro-Québec TransEnergie</p>	<p>No</p>	<p>HQT agree with some but not all of the proposed changes to the other standards. (1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.(2) IRO-002 R2: We agree with retiring this requirement.(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to be incorporated in an appropriate standard. (4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." R13 actually contains two requirements that are not covered by the new IRO-009: (a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since a SOL may become an IROL as system conditions change. (b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent</p>

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Organization/Group	Question 7:	Question 7 Comments:
		situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence. (5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change. (6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 and R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference. (7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	Yes	
Manitoba Hydro	Yes	
Operating Reliability Working Group	No	The retirement of IRO-004-1, R4 and R5 and replacement by IRO-010-1, R1, R2 and R3 seem to be focused on the front-end data sharing requirements. IRO-004-1, R5 specifically addresses sharing the results of the Reliability Coordinator's studies. We can not find a comparable replacement in IRO-010-1, or elsewhere, for this requirement. The SDT should consider moving IRO-005-2, R13 and R14 since these requirements are no longer directed toward the Reliability Coordinator. They don't fit in the IRO standards. We can't seem to find an entry for the retirement of R7 of IRO-004-1. Attachment 1 to TOP-005-2 is shown in the redline version as being deleted apparently due to the proposed retirement of R1. However, Attachment 1 is also referenced in R3 and therefore should not be deleted.
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	We indicated "Yes" but are really unsure if we are sufficiently aware of what the impacts of the modifications are to system operations. We appreciate the extraordinary amount of effort by individuals involved in developing and revising standards, but we find the implementation plan confusing. This is not the fault of the drafting team, but the fault of the process. There have been innumerable changes to existing standards and to the Functional Model, coupled with FERC requirements to make changes in order to receive their approval. Revisions to standards are being promulgated too rapidly for members to have time to review or keep abreast of proposed changes. The Implementation Plan appears to justify the proposed revisions to, and retirement of, existing standards. we can only trust that the drafting team is using the currently approved version of each identified standard and has stayed abreast of any proposed changes to those standards.
San Diego Gas and Electric Co.	Yes	
Ontario IESO	No	We agree with some but not all of the proposed changes to the other standards. (1) EOP-001 R2: We do not



Organization/Group	Question 7:	Question 7 Comments:
		<p>agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.</p> <p>(2) IRO-002 R2: We agree with retiring this requirement.</p> <p>(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to have a "home".</p> <p>(4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.</p> <p>(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.</p> <p>(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection" actually contains two requirements that are not covered by the new IRO-009: (a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change. (b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence.</p> <p>(5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change.</p> <p>(6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 and R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference.</p> <p>(7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control:</p>

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Organization/Group	Question 7:	Question 7 Comments:
ISO RTO Council Standards Review Committee	No	<p>Modify R4. We agree with this change.</p> <p>We do not agree with all of the proposed changes. (1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.(2) IRO-002 R2: We agree with retiring this requirement.(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to have a "home". (4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." actually contains two requirements that are not covered by the new IRO-009: (a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change. (b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence. (5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change. (6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 ad R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference</p>

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Organization/Group	Question 7:	Question 7 Comments:
		documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference. (7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.
FirstEnergy	Yes	The effective dates correctly follow the end of the implementation schedule for FAC-014.
Hydro One Networks	No	We do not agree with the elimination of EOP-001-0 R2 as the RC and TOP must work together in planning how to implement load reduction. We do not agree with retiring R3 of IRO-004-1. Where SOLs and IROLs are known at least a day prior to the current day, the RC should have enough time to "coordinate" the development of action plans required to return transmission loading to within acceptable SOLs and IROLs with its Transmission Operators and Balancing Authorities. Otherwise how does the RC know if their plan is feasible or effective? Developing "effective" plans to mitigate SOLs and IROLs are a operation planning function and therefore belong in the IRO-004-1 Reliability Coordination - Operations Planning standard. We do not agree with the retirement of IRO-005-2 R5. We agree that the RC may not be the responsible entity for SOLs violations however; it would be more prudent to modify the requirement instead of retiring it completely. Perhaps take "SOL" out of the requirement and create a new requirement having the TOP responsible for SOL violations. There is confusion on whether you want to retire or modify IRO-005-2 R13 (page 3 verses page 20). We suggest modifying R13 by separating it into two separate requirements. The first having the RC responsible for ensuring all entities operate to prevent actions in their Reliability Coordinator Area that results in IROL violations in another area of the interconnection. The second requirement to have these same entities excluding the RC, to always operate the BES to the most limiting parameter. For TOP-003, TOP-005 and TOP-006, we believe a SAR should be initiated to "clean-up" standards & requirements that may be redundant or incorrect as apposed to retiring them within an implementation plan which pertains to a different set of standards.
ISO New England Inc	No	We do not agree with all of the proposed changes. (1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action. (2) IRO-002 R2: We agree with retiring this requirement. (3) IRO-004-1: We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system

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		<p>information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to have a "home". (4) IRO-005-2: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." actually contains two requirements that are not covered by the new IRO-009: (a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change. (b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence. (5) TOP-003-0: Modify R1.2. We agree with this change. (6) TOP-005-1: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 ad R1.1 and the proposed conversion of Attachment 1 into a reference. (7) TOP-006-1: Modify R4. We agree with this change.</p>
American Transmission Company LLC	No	<p>Issue 1: The implementation plan states that all of IRO-004-1 will be deleted when IRO-008, 009 and 010 are approved. Requirement 7 in IRO-004-1 is not being covered in any of the proposed new standards. The SDT needs to document the justification behind the deletion of R7 in IRO-004-1 before the entire standard can be deleted. Issue 2: ATC does not agree that IRO-005-1 R2 is duplicative of IRO-010-1 R1 and R2. IRO-005-1 R2 requires monitoring but IRO-010-1 R1 and R2 are data specification requirements for study purposes. ATC believes that the RC should be required to monitor Interchange Transactions. Issue 3: Requirement 14 of IRO-005-1: The SDT has proposed to remove the language that requires the RC to provide the TSP with SOL and IROL limits. We were unable to locate any requirements in IRO-008, 009 and 010 that requires the RC to share SOL and IROL limits with the TSP. It should be the obligation of the RC to provide these limits to the TSP. IRO-002-1 R5 and R6 require the RC to monitor SOLs and FAC-014 R1 requires the RC to ensure that SOLs and IROLs are consistent with its SOL Methodology. Issue 4: ATC does not agree with the changes to TOP-005-1. Although TOP-005 Requirement 1 may be a duplicate of IRO-010, TOP-005 obligates that the RC to identify the data requirements for the "Electric System Reliability Data". TOP-005-1 requirements 2 and 3 still address the "Electric System Reliability Data" section so making it a reference document does not remove it from the mandatory realm. In addition, the RC should be required to sign the "NERC Confidentiality Agreement" identified in TOP-005-1 because the TOP, BA and PSE still have to supply the data specified by the "Electric System Reliability Data" requirements. Issue 5: TOP-006-1 R4: ATC does not agree with the Set's</p>

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		<p>changes to R4 in TOP-006-1. We believe that the RC should be required to purchase their own weather forecasting service. Since most utilities purchase weather forecasting services from third party vendors, which have restrictions about sharing that information, this change would require ATC to purchase and maintain a weather forecasting license for our RC. ATC believes that the above statement is true because the SDT is recommending in its implementation plan that the RC would specify in IRO-010 R1 and R2 the required weather forecasting information. If this is not the case then the SDT should provide information as to why the RC is being removed from Requirement 4 in TOP-006-1.</p>

8. If you have any other comments on this set of standards that you haven't already provided, please provide them here?

Organization/Group	Question 8 Comments:
Northeast Utilities	<p>(1) For IRO-009, the VFRs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"):High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.</p>
NPCC Regional Standards Committee, RSC	<p>(1) For IRO-009, the VFRs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"):High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of</p>

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	those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.
Hydro-Quebec TransEnergie	(1) For IRO-009, the VFRs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"):High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.
Entergy Services	
RCCWG - reliability coordinator comments working group	RSAWS need to be developed in parallel with standard revisions to they maintain the intention of the standard for the audit team.
Manitoba Hydro	There needs to be coordination between IRO-010-1, TOP-005-0 Attachment 1, and VAR-002-1. Is it the intention of IRO-010-1 to ensure the RC has real-time data to monitor the state of the bulk electric system? TOP-005-0 Attachment 1 which is to become a Technical Reference states "1. The following information shall be updated at least every 10 minutes." VAR-002-1 R3 states "Each Generator Operator shall notify its associated Transmission Operator as soon as practical, but within 30 minutes of any of the following: R3.1. A

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	<p>status or capability change on any generator Reactive Power resource, including the status of each automatic voltage regulator and power system stabilizer and the expected duration of the change in status or capability.R3.2. A status or capability change on any other Reactive Power resources under the Generator Operator's control and the expected duration of the change in status or capability." This does not give the impression that real time status is required. For BES reliability, we ultimately think there should be real-time status from the AVR, PSS or SPS into the entity's Control Centre EMS and simultaneously through an ICCP link to the RC EMS. This approach would be the most robust with the least amount of chance of a communication break down attributed to human error. For an entity with over 100 generators, a project to bring real time AVR, PSS and SPS status into the Control Centre EMS and transfer the data via ICCP to the RC EMS would be very time consuming and costly. We would suggest a period of grace (dependent on number of RTU points required (up to several years)) for entities to reach this goal. During this grace period we suggest that knowledge of AVR, PSS, and SPS status by default is sufficient. In other words the device is considered "in service/on auto" unless the system operator is notified differently. The system operator manually toggles into SCADA the status of the device. The device's status change is communicated to the RC "without delay" either electronically or verbally. The device status in the RC EMS would be updated at this time. Both the entity's and the RC's EMS Real Time Contingency Analyses would be utilizing the latest known AVR, PSS and SPS status. As I see it, this approach, if agreed to by the RC, would satisfy IRO-010-1 R1 - R1.3 and R1 Violation Severity Levels "Lower" through to "Severe".</p>
<p>Operating Reliability Working Group</p>	<p>The Applicability section of IRO-009-1 includes more than a list of entities to which the standard applies. In this situation, a 'what' the standard applies to be included. We've never seen this before and question it's applicability in this case. Add parenthesis around the phrase 'up to and including load shedding' in R1 of IRO-009-1. The same phrase already exists in R2 in parenthesis. In the Compliance Section D, Item 1.4 Data Retention of IRO-010-1 the third paragraph states that the BA, GO, GOP, LSE, RC, TOP and TO shall keep evidence used to show compliance with R3 and M3. How much evidence is required? Prior versions of IRO-010 indicated that 3 months of evidence would be sufficient. Not including a specific reference leaves the standard vague. A specific reference should be included. We suggest returning to the 3 month requirement. Also in this same Item 1.4 the phrase "in advance of real-time" shows up. If it was replaced in IRO-009-1, it should also be replaced here as well.</p>
<p>SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1</p>	<p>We feel that the Implementation Plan should not set different implementation dates for jurisdictional and non-jurisdictional entities. This puts an additional burden on Reliability Coordinators to resolve problems involving entities subject to different standards. Our recommendation is that the standard should become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval. One concern certain members have involves data retention requirements for IRO-10-1 at R3 and M3 when a system is part of an ISO or RTO and is required by its Reliability Coordinator to input its data into the ISO or RTO business system. For instance, a Reliability Coordinator may require generator operators to periodically update generator operating limits in support of R1-R3 citing two (2) horizons for such entries: (1) the</p>



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Organization/Group	Question 8 Comments:
	day prior to the operating day and (2) as changes occur in real time. Members agree with the requirements, however data is manually entered into the business system and the member does not have the ability to retain the data or verify that it was entered. Given that the requirements call for the Reliability Coordinator to be provided the data, the measures should require that the RC retain the data provided.
San Diego Gas and Electric Co.	
Ontario IESO	(1) For IRO-009, the VFRs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"):High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly. (3) For R2/M2 of IRO-008, it is not possible to keep records of 30 minute IROL analysis for 30 days. Such time-logged analysis which are probably the only evidence of 30 minute analysis and these can only be located on the security analysis software and we do not believe that such software have the capability of keeping such extended records. We believe that the evidence retention for R2/M2 should be a couple of days at the most. in other words, the previous documentation retention requirement for this requirement should be retained.
ISO RTO Council Standards Review Committee	(1) For IRO-009, the VFRs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on

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	<p>"planning time frame"):High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.</p>
FirstEnergy	<p>FE has the following additional comments and suggestions: (1) IRO-010 - Requirement R1 - Remove the word "data" between documented and specification to improve clarity and readability. (2) The last sentence of R3 contains a phrase that was previously proposed to be a new term in IRO-007-1, but is now being deleted. If this intended to be retained as a new definitional term within the Glossary it will need to be added to IRO-010.When revised R1.1 and R3 should read as follows: (3) IRO-010 - Presumably the last sentence of R3 is designed to limit the data that the Reliability Coordinator may request from the various responsible entities listed. However, in its current state, the requirement seems to limit what the affected entities can provide. We suggest that it may be clearer to remove the last sentence of R3 and append it to the existing R1.1 requirement. The new R1.1 and R3 are proposed as follows:"R1.1. List of required data and information. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.""R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified by R1 above, to the Reliability Coordinator(s) with which it has a reliability relationship."(4) With regard to Attachment 1 of TOP-005-2, this information in this attachment is to be transferred to a "Reference" document. However, it is not clear when this reference document is to be developed since a draft of this proposed reference is not available for comment. We suggest this reference document be developed and posted along with these new IROL standards so that it is all completed at the same time. The reference document will be a valuable tool to be used in conjunction with the standards and should be developed in conjunction with these standards.(5) In some of the revised standards, references to previous IROL requirements have been removed as they are now covered in the proposed IRO standards. In some cases, these revisions have led to entire requirements being deleted. It is brought to the attention of the SDT</p>

Organization/Group	Question 8 Comments:
	that requirement re-numbering was not correctly shown in the red-line standards provided for review and will need to be corrected in final changes. (e.g. EOP-001, TOP-005, etc.)(6) In IRO-009-1 the Applicability section contains 4.2 stating "The IROLs covered in this standard are limited to those associated with contingencies studied under FAC-011 and FAC-014." The NERC Standard Development Procedure indicates that the Applicability Section is intended to describe the 1) entities responsible for complying with the standard and 2) if needed, the portion of the bulk power system for which the standard is applicable. The 4.2 item may introduce an unintended use of the Applicability section and it may be better to move this item to a new requirement R1 in the standard worded as follows:"R1 Each Reliability Coordinator shall manage its current day system against IROL conditions identified in a manner consistent with the requirements of standards FAC-011 and FAC-014."
Hydro One Networks	We believe a SAR should be initiated to "clean-up" standards & requirements that may be redundant or incorrect as apposed to retiring them within an implementation plan which pertains to a different set of standards. As well, for IRO-009, the VRFs for R1 and R2 should both be High.
ISO New England Inc	
American Transmission Company LLC	Operational Planning Analysis (Definition): The phrase "next day's operation and up to 12 months ahead" (See definition of Operational Planning Analysis) is too broad when used in the context of requirement 1. The definition should be broken into two independent definitions one to address the "next day study" and a second to address the "up to 12 months study". Requirement 1 states that the RC has to perform an Operational Planning Analysis which, we have identified above, means "next day and up to 12 months" for the next operating day. By including the "up to 12 months" in the definition we believe that for every next day study the RC has to perform two independent studies. 1) One for the next day and 2) One for some other day that is up to 12 months It is for this reason that we suggest that the definition be broken into two distinct terms.IRO-008-1: ATC believe that IRO-008-1 R1 and R2 should be expanded to include SOLs in the Operational Planning Analysis and Real-Time Assessment. IRO-009-1The applicability section of that standard is to be used to identify the functional entity that must comply with the standard. The SDT is using this section to place an exception on the requirements. Any exception should be identified in the requirements. (Solution could be with a footnote) Standard IRO-009-1 needs two additional requirements: 1) Require the RC has to coordinate their plans with entities that are expected to perform an action in the plan. 2) Distribute and share those plans with entities that are expected to perform an action. R3 ATC is concern that compliance is based on following the plan and what is more important is if the RC prevented the IROL from exceeding the Tv. The requirement should specify that the RC prevents the IROL not that they follow their plan. IRO-010-1 Data Retention rule A more specific data retention period should be established. The current language would require ATC to keep data anywhere from one month to seven years or more. "For data that is requested in advance of real-time the TOP shall keep evidence used to show compliance with R3 for the RC's most recent data specifications." (If the RC updated their data specifications once every seven years all entities must retain their data for seven years.) General Comment: ATC suggest that this SDT work closely with the Reliability Coordinator SDT in order to ensure a comprehensive set of standards.



## **Consideration of Comments on Draft 9 of the IROL Standards — IRO-008-1 through IRO-010-1**

The IROL Standard Drafting Team thanks all commenters who submitted comments on draft 9 of the Interconnection Reliability Operating Limit standards. These standards were posted for a 30-day public comment period from March 26, 2008 through April 25, 2008. The stakeholders were asked to provide feedback on the SAR through a special Standard Comment Form. There were 15 sets of comments, including comments from more than 100 different people from more than 40 companies representing 7 of the 10 Industry Segments as shown in the table on the following pages.

Based on the comments received from stakeholders and FERC staff, and the drafting team's consideration of those comments, the drafting team made the following modifications to the standards:

### **IRO-008**

- Added clarifying language to the definition of Operational Planning Analysis to clarify that the analysis may be performed a day ahead or as much as 12 months ahead of real-time.
- Added clarifying language to the VSLs for R2 to identify that the VSLs are based on the review of a specific sample size.

### **IRO-009**

- The drafting team removed 4.2 from the Applicability Section (limited applicability to the IROLs associated with contingencies identified in FAC-010 and FAC-014) of the standard because it duplicated information already included in the requirements.
- Modified R1 – R5 and associated measures and VSLs to clarify that the action plans and actions in this standard are limited to those associated with IROLs in the Reliability Coordinator's own Reliability Coordinator Area. IRO-016 addresses coordination when there is an IROL in another Reliability Coordinator's Area, or when there is a need to coordinate development and execution of action plans involving more than one Reliability Coordinator.
- Added a parenthetical phrase to R3 to clarify that the Reliability Coordinator may use any action plan at its disposal to prevent or mitigate an instance of exceeding an IROL
- Added a parenthetical phrase to R5 to clarify that "the most conservative value" is the value that has the least impact on reliability.
- Eliminated the "high" VSL for R3 in support of stakeholder comments indicating that the requirement is aimed at actions, not at preventing an instance of exceeding an IROL.
- Eliminated one of the two "severe" VSLs for R5 in support of stakeholder comments indicating that the two VSLs were redundant.

### **IRO-010**

- Modified R1 and R1.1 in support of comments from FERC staff and stakeholders by adding words from the purpose and from R3 to clarify the intent of the requirement is to collect data and information needed by the Reliability Coordinator to support

Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments to prevent instability, uncontrolled separation, and cascading outages.

- Added a data retention period for R3 based on stakeholder comments. The data retention period added matches the period recommended by the Compliance Program.
- Revised the VSLs for R1 by reversing the VSLs for “Lower” and “Moderate” based on stakeholder comments indicating that missing the “mutually agreeable format” was less severe than missing the process for data provision when automated Real-Time system operating data is unavailable.

#### **Implementation Plan:**

- Removed the recommendation to retire Attachment 1 in TOP-005-2 because stakeholders identified that the attachment is still needed to support Requirement R3 in TOP-005-2.

#### **Definition of Operational Planning Analysis**

- Added language to clarify that the Operational Planning Analysis can be performed a day ahead or as much as 12 months ahead.

The drafting team believes that the above modifications will satisfy most comments suggesting that the standards or implementation plan need adjustments. There were several places where stakeholders indicated a lack of understanding in the terminology associated with some of the defined terms as well as confusion about some of the terminology associated with the elements in the standard used by the compliance program such as time horizons and violation risk factors. The drafting team believes that the information it provided should satisfy these commenters.

The drafting team did not adopt the following proposed modifications from stakeholders or from FERC staff:

- Some commenters who agreed that monitoring is a supporting activity, indicated a concern that removing the monitoring requirement may impact other requirements in other standards that rely upon monitoring. The drafting team did not return the monitoring requirements to the standards. Entities that do not have real-time system operators actively monitoring the status of the bulk power system cannot achieve the performance-related requirements in this standard and in other standards.
- Some commenters wanted the Severe VSL for failing to resolve an IROL within the IROL’s  $T_v$  to be a “High” VSL when the Reliability Coordinator took action to resolve the IROL but was not successful. The drafting team believes that this change would violate the guidelines for setting VSLs. The intent of the requirement is not met at all if the IROL is not resolved within the IROL  $T_v$ . The guidelines for setting VSLs indicate that if the intent of the requirement is mostly or totally unmet, then the VSL should be “Severe.”
- FERC staff interpreted one of the directives in Order 693 as requiring the Reliability Coordinator to have action plans to implement if a contingency occurs during the system adjustment period following an instance of exceeding an IROL, but before the IROL  $T_v$  has been reached and before the system has been returned to a stable state. The drafting team did not interpret the directive (paragraph 1601 of Order 693) in this manner. The IROL standards require an action plan for all IROLs identified a day or more ahead of the current day for all IROLs within the Reliability Coordinator’s Reliability Coordinator Area. The drafting team does not think it is

practical to develop action plans for all possible contingencies that could occur during the adjustment period while the system is being returned to a stable state.

- There were several commenters who indicated the VRFs for requirements associated with having action plans should be modified from “Medium” to “High.” The drafting team had posted the VRFs for comment in an earlier posting, and the same commenters had earlier agreed that the VRFs should be “Medium.” Because the drafting team had achieved what appeared to be consensus on the VRFs in the earlier posting, the drafting team did not make the requested change. Failure to have an action plan should not, by itself, cause or contribute to uncontrolled separation, instability, or cascading.

The drafting team does not believe that the modifications made are significant enough to warrant posting the revised standards for an additional comment period, and will ask the Standards Committee for authorization to move the standards and the implementation plan forward to ballot.

In this ‘Consideration of Comments’ document stakeholder comments have been organized so that it is easier to see the responses associated with each question. All comments received on the standards can be viewed in their original format at:

<http://www.nerc.com/~filez/standards/IROL.html>

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

**Index to Commenters, Questions, Comments, and Responses**

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1. The drafting team eliminated IRO-007-1 Requirement R1, the requirement for the Reliability Coordinator to “monitor” its wide area. Monitoring is a “how” – staying within the IROLs is the “required performance.” Do you agree with this change?..... 8
2. The drafting team moved IRO-007-1 Requirement R2 (from IRO-007 R2 to IRO-009 R5), the requirement for the Reliability Coordinator to use the most conservative value under consideration when there is a disagreement amongst Reliability Coordinators on the value of an IROL or its  $T_v$ . This move seemed to put the related requirements together in a single standard and allowed the elimination of IRO-007. Do you agree with this change? .....10
3. The drafting team modified the Violation Severity Levels for IRO-008. Do you agree with the new VSLs? ..... 11
4. The drafting team modified IRO-009-1 R1 and R2 by replacing the phrase, “in advance of real-time” with the phrase, “one or more days prior to the current day” to clarify the intent and measurability of these requirements. Do you agree with the change made to R1 and R2 in IRO-009-1? ..... 18
5. The drafting team modified the Violation Severity Levels for IRO-009. Do you agree with the new VSLs? .....22
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8. If you have any other comments on this set of standards that you haven’t already provided, please provide them here?..... 45

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Individual	Craig McLean	Manitoba Hydro	1 - Transmission Owners, 3 - Load-serving Entities, 6 - Electricity Brokers, Aggregators																																																																																	

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Group	Charles Yeung	ISO RTO Council Standards Review Committee	2 - RTOs and ISOs	<table border="1"> <thead> <tr> <th></th> <th>Additional Member</th> <th>Additional Organization</th> <th>Region</th> <th>Segment Selection</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Patrick Brown</td> <td>PJM</td> <td>RFC</td> <td>2</td> </tr> <tr> <td>2.</td> <td>Jim Castle</td> <td>NYISO</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>3.</td> <td>Ron Falsetti</td> <td>IESO</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>4.</td> <td>Matt Goldberg</td> <td>ISO NE</td> <td>NPCC</td> <td>2</td> </tr> <tr> <td>5.</td> <td>Brent Kingsford</td> <td>CAISO</td> <td>WECC</td> <td>2</td> </tr> <tr> <td>6.</td> <td>Anita Lee</td> <td>AESO</td> <td>WECC</td> <td>2</td> </tr> <tr> <td>7.</td> <td>Steve Myers</td> <td>ERCOT</td> <td>ERCOT</td> <td>2</td> </tr> <tr> <td>8.</td> <td>Bill Phillips</td> <td>MISO</td> <td>RFC</td> <td>2</td> </tr> </tbody> </table>		Additional Member	Additional Organization	Region	Segment Selection	1.	Patrick Brown	PJM	RFC	2	2.	Jim Castle	NYISO	NPCC	2	3.	Ron Falsetti	IESO	NPCC	2	4.	Matt Goldberg	ISO NE	NPCC	2	5.	Brent Kingsford	CAISO	WECC	2	6.	Anita Lee	AESO	WECC	2	7.	Steve Myers	ERCOT	ERCOT	2	8.	Bill Phillips	MISO	RFC	2
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Individual	Jason Shaver	American Transmission Company LLC	1 - Transmission Owners																																														

**Consideration of Comments on Draft 9 of IROL Standards**

1. The drafting team eliminated IRO-007-1 Requirement R1, the requirement for the Reliability Coordinator to “monitor” its wide area. Monitoring is a “how” – staying within the IROLs is the “required performance.” Do you agree with this change?

**Summary Consideration:** Most stakeholders who responded to this question agreed with the removal of Requirement R1 from IRO-007-1.

Organization/Group		Question 1 Comments:
Ontario IESO	No	The IESO agrees that monitoring is implicit in this set of standards given the RC is held responsible for operating the system within IROLs, and taking corrective actions to prevent and mitigate instances where an SOL or IROL is (or expected to be) exceeded. Nonetheless, the requirement to monitor drives the need for other standards, such as communication and provision of monitoring facilities. Its removal may leave a void in this aspect. We suggest the Standard Drafting Team consider the impact of removing this requirement on the other standards.
<p><b>Response:</b> The drafting team has considered the impact of removing this requirement. Other drafting teams (Reliability-based Control SDT, Reliability Coordination SDT, and Real-time Operations SDT) have removed the “monitoring” requirements from other standards for the same reason that the IROL SDT proposed removing this monitoring requirement. Monitoring is a supporting task used to achieve the objective of operating within IROLs. Most stakeholders who provided comments support the drafting team’s position. FERC has said, if you have a plan, by definition you have to implement it – this is a parallel argument – if you must operate within IROLs, you must monitor.</p>		
ISO RTO Council Standards Review Committee	No	On the one hand, the IRC agrees that monitoring is implicit in this set of standards given the RC is held responsible for operating the system within IROLs, and taking corrective actions to prevent and mitigate instances where an SOL or IROL is (or expected to be) exceeded. Nonetheless, the requirement to monitor drives the need for other standards, such as communication and provision of monitoring facilities. Its removal may leave a void in this aspect. We are therefore unable to indicate a preference. We suggest the Standard Drafting Team consider the impact of removing this requirement on other standards.
<p><b>Response:</b> The drafting team has considered the impact of removing this requirement. Other drafting teams (Reliability-based Control SDT, Reliability Coordination SDT, and Real-time Operations SDT) have removed the “monitoring” requirements from other standards for the same reason that the IROL SDT proposed removing this monitoring requirement. Monitoring is a supporting task used to achieve the objective of operating within IROLs. Most stakeholders who provided comments support the drafting team’s position. FERC has said, if you have a plan, by definition you have to implement it – this is a parallel argument – if you must operate within IROLs, you must monitor.</p>		
ISO New England Inc	No	We understand that monitoring is implicit in this set of standards given the RC is held responsible for operating the system within IROLs, and taking corrective actions to prevent and mitigate instances where an SOL or IROL is (or expected to be) exceeded. Nonetheless, the requirement to monitor drives the need for other standards, such as communication and provision of monitoring facilities. Its removal may leave a void in this aspect. We suggest the SDT consider the ramifications of removing this requirement on other standards.
<p><b>Response: Response:</b> The drafting team has considered the impact of removing this requirement. Other drafting teams (Reliability-based Control SDT, Reliability Coordination SDT, and Real-time Operations SDT) have removed the “monitoring” requirements from other standards for the same reason that the IROL SDT proposed removing this monitoring requirement. Monitoring is a supporting task used to achieve the</p>		

Consideration of Comments on Draft 9 of IROL Standards

Organization/Group		Question 1 Comments:
<p>objective of operating within IROLs. Most stakeholders who provided comments support the drafting team’s position. FERC has said, if you have a plan, by definition you have to implement it – this is a parallel argument – if you must operate within IROLs, you must monitor.</p>		
Hydro One Networks	Yes	<p>We believe it is ok to eliminate IRO-007-1 R1, as IRO-008-1 R2 requiring the RC to perform "Real-Time Assessments" (every 30 minutes) to determine if any IROL is exceeded, covers off the intent of IRO-007-1 R1. In addition, IRO-008-1 R2 has, at a minimum, a Violation Risk Factor and Time Horizon at least equal to or stricter than IRO-007-1 R1.</p>
<p><b>Response:</b> The drafting team appreciates your support. This is the philosophy the drafting team used in making the recommendation to retire the requirement.</p>		
American Transmission Company LLC	Yes	<p>ATC is okay with dropping IRO-007 R1 because it is covered in IRO-002-1 R5 and R6. IRO-002-1 R5 and R6 require the RC to monitor BES elements that could result in SOL or IROL violations.</p>
<p><b>Response:</b> Thank you for your support. We advise you to monitor the work of the Reliability Coordination standard drafting team as they are recommending retirement of IRO-002-1 R5 and R6.</p>		
Northeast Utilities	Yes	
NPCC Regional Standards Committee, RSC	Yes	
Hydro-Québec TransEnergie	Yes	
Entergy Services	Yes	
Manitoba Hydro	Yes	
Operating Reliability Working Group	Yes	
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	
San Diego Gas and Electric Co.	Yes	
FirstEnergy	Yes	

## Consideration of Comments on Draft 9 of IROL Standards

2. The drafting team moved IRO-007-1 Requirement R2 (from IRO-007 R2 to IRO-009 R5), the requirement for the Reliability Coordinator to use the most conservative value under consideration when there is a disagreement amongst Reliability Coordinators on the value of an IROL or its  $T_v$ . This move seemed to put the related requirements together in a single standard and allowed the elimination of IRO-007. Do you agree with this change?

**Summary Consideration:** All commenters who responded to this question agreed with moving Requirement R2 from IRO-007-1 to IRO-009.

Organization/Group		Question 2 Comments:
Northeast Utilities	Yes	Please define $T_v$ in the standard.
<b>Response:</b> IROL $T_v$ is an approved definition.		
Hydro One Networks	Yes	Since IRO-007-1 R2 describes an action with respect to IROLs, it is appropriate to move that requirement to the IRO-009-1 standard Reliability Coordinator Actions to Operate within IROLs. In addition, the VRF, Time Horizon and VSL (severe) have all been kept the same. Therefore elimination of IRO-007-1 is also appropriate at this time.
<b>Response:</b> The drafting team appreciates your support.		
NPCC Regional Standards Committee, RSC	Yes	
Hydro-Québec TransEnergie	Yes	
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	Yes	
Manitoba Hydro	Yes	
Operating Reliability Working Group	Yes	
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	
San Diego Gas and Electric Co.	Yes	
Ontario IESO	Yes	
ISO RTO Council Standards Review Committee	Yes	
FirstEnergy	Yes	
ISO New England Inc	Yes	
American Transmission Company LLC	Yes	

### 3. The drafting team modified the Violation Severity Levels for IRO-008. Do you agree with the new VSLs?

**Summary Consideration:** None of the commenters who responded to this comment indicated agreement with the proposed VSLs. Some comments indicated misunderstanding of the definition of “Real-time Assessment,” some commenters indicated confusion about the multiple definitions being used for the term, “Time Horizons,” and some commenters asked for more clarity in the use of “sample periods” in the VSLs for R1 and R2.

**Real-time Assessments** – Some commenters suggested that the VSLs in R2 are overly punitive, because they don’t allow any “down time” for the EMS. The term, “Real-time Assessment” is defined as follows and does not have to be performed using only a state estimator – the definition allows the use of other tools and processes:

- An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

The definition was designed so that you could still conduct a Real-time Assessment, if needed, using readily available data collected through manual processes.

**Time Horizons** - The “Time Horizons” used for the Sanctions Guidelines are not the same as the operations and planning periods described in the Functional Model. The *Glossary of Terms Used in Reliability Standards* does not include an approved definition of either the term “Planning Horizon” – or the term, “Operations Horizon.” The Time Horizons (designed for use in determining the size of a penalty or sanction) associated with each requirement in a standard use the following definitions:

- Long-term Planning — a planning horizon of one year or longer.
- Operations Planning — operating and resource plans from day-ahead up to and including seasonal.
- Same-day Operations — routine actions required within the timeframe of a day, but not real-time.
- Real-time Operations — actions required within one hour or less to preserve the reliability of the bulk electric system.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

**Sample Periods** - Commenters asked the drafting team to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. Commenters also asked the drafting team to identify the basis for the use of the 24 hour period for the VSLs for R2 and suggested that there was a conflict with a VSL that described noncompliant performance measured over a 30 day period with the definition of Operational Planning Analysis. These comments indicate a misunderstanding on the use of VSLs as well as a misunderstanding about the definition of “Operational Planning Analysis.” VSLs describe categories of noncompliant performance and are used by the Compliance Enforcement Authority to help determine the size of a penalty or sanction. The VSLs for R1 are based on the Compliance Enforcement Authority using the data retained by the responsible entity to determine if there were noncompliant performance. The Data Retention period for evidence used to show compliance with Requirement R1 is a rolling 30 days. If, after reviewing the 30 days of data, the Compliance Enforcement Authority finds that there were three days that did not have an operational planning analysis, then the noncompliant performance falls into the High Violation Severity Level category. Based on the comments, the drafting team modified the VSLs for R2 to provide clarity by making the following addition to each of the VSLs for R2:

## Consideration of Comments on Draft 9 of IROL Standards

Lower VSL for R2: **For any sample 24 hour period within the 30 day retention period, a** Real-time Assessment was not conducted for one 30-minute period within **a that** 24-hour period

The drafting team added a sentence to the definition of “Operational Planning Analysis” as shown below to clarify that the analysis is for the next day’s operation – but the analysis does not necessarily have to be conducted every day.

**Operational Planning Analysis:** An analysis of the expected system conditions for the next day’s operation. **(The analysis may be performed either a day ahead or as much as ~~and up to~~ 12 months ahead.)** Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

Organization/Group		Question 3 Comments:
Ontario IESO	No	<p>We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period.</p> <p>This question also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis. We asked the SDT to extend the sampling period to 12 months in accordance with the general understanding of the time frame for operations planning.</p>
<p><b>Response:</b> The 30 days in the VSLs for R1 came from the data retention period for R1 in this standard – which is a rolling 30 days for R1. The data retention period was intended to ensure that there is sufficient data for the Compliance Enforcement Authority to measure compliance, without overwhelming the responsible entity. We do not agree that RCs should retain 12 rolling months of analyses to demonstrate compliance with this requirement since it would be burdensome to retain that much data.</p> <p>The drafting team assumes that the comment about R3 is really about R2 – since the VSL for R2 includes the “24 hour period” and R3’s VSLs do not. The intent of the 24 hour period was to set boundaries on the sample size used to assess compliance. The drafting team modified the VSL to include language to identify that the VSLs are based on a sample 24 hour period within the 30 day retention period.</p> <p>The “Time Horizons” used for the Sanctions Guidelines are not the same as the operations and planning periods described in the Functional Model. The Time Horizons associated with each requirement in the standard, use the following definitions of the various time periods:</p> <ul style="list-style-type: none"> <li>– Long-term Planning — a planning horizon of one year or longer.</li> <li>– Operations Planning — operating and resource plans from day-ahead up to and including seasonal.</li> <li>– Same-day Operations — routine actions required within the timeframe of a day, but not real-time.</li> </ul>		



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- Real-time Operations — actions required within one hour or less to preserve the reliability of the bulk electric system.
- Operations Assessment — follow-up evaluations and reporting of real time operations.

Note that the Glossary of Terms Used in Reliability Standards does not include an approved definition of either the “Planning Horizon” – or the term, “Operations Horizon.”

Northeast Utilities	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis.
<b>Response:</b> Please see the <a href="#">Summary Consideration and the response to IESO</a> .		
NPCC Regional Standards Committee, RSC	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis.
<b>Response:</b> Please see the <a href="#">Summary Consideration and the response to IESO</a> .		
Hydro-Québec TransEnergie	No	HQT agree with the changes to the VSLs for R2 and R3, but is unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis.
<b>Response:</b> Please see the <a href="#">Summary Consideration and the response to IESO</a> .		
ISO New England Inc	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This question also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours as being the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis. We ask the SDT to extend the sampling period to 12 months in accordance with the general understanding of the time frame for operations planning.
<b>Response:</b> Please see the <a href="#">Summary Consideration and the response to IESO</a> .		
ISO RTO Council Standards Review Committee	No	We agree with the changes to the VSLs for R2 and R3, but are unable to identify the basis for the VSLs for R1, in particular the 30-day "sample" period. This question also applies to the 24 hour period for the VSLs for R3 except in the context of real-time operation, most would assume the next 24 hours being a part of the real-time horizon. The 30-day period, however, may not be generalized for the operational planning horizon given a 12 month period already specified in the definition for Operational Planning Analysis. We ask the SDT to extend the sampling period to 12 months in accordance with the general understanding of the time frame for operations planning.
<b>Response:</b> Please see the <a href="#">Summary Consideration and the response to IESO</a> .		
SERC OC Standards	No	We feel that the Violation Severity Levels for IRO-008-1, R2, if applied as currently proposed, are unduly restrictive in

Consideration of Comments on Draft 9 of IROL Standards

<p>Review Group - IROL Standards, IRO-008-1, 009-1, 010-1</p>	<p>measuring the impact of violating the requirement to run a real-time assessment every thirty (30) minutes for the following reasons:</p> <ol style="list-style-type: none"> <li>1. During a large portion of the time, system conditions do not change within a thirty (30) minute period and the risk to the interconnection is not the same for every thirty (30) minute period. When violations are not commensurate with the risk to the Interconnection or where there is no real harm, the penalties should be waived or reduced accordingly. Another way of saying this is that the Violation Severity Level and measurement criteria of IRO-008-1 do not measure the potential risk to the interconnection due to violation of these criteria. In fact, no strictly time based criteria can. The best criteria would be the determination of risk to the interconnection (or change in the level of risk in a positive or higher risk direction) that was not properly detected and acted upon by the Reliability Coordinator. One potential way that this could actually be measured during "after the fact audits" is by choosing a set of specific occurrences during the previous year that impacted interconnection reliability within the RC area and reviewing the RC's documented responses to them. This would greatly enhance the ability of auditors to measure actual RC performance rather than just measuring how often the RC went through the motions of performing an analysis.</li> <li>2. The requirements do not allow for scheduled maintenance or unplanned down time of EMS systems, thereby requiring a perfect compliance performance for 17,520 study periods in a year. This doesn't allow for any down time for EMS or assessment applications (State Estimator) and this imposes impossible criteria on EMS operations and guarantees that every system will have one or more violations each year. This places an emphasis on or actually measures the performance of tools rather than on the performance of the Reliability Coordinators</li> <li>3. The drafting team may want to seriously reconsider the thirty (30) minute requirement for running real time assessments. Hourly assessments would be more practical for assessing system conditions and for compliance requirements. Systems generally conduct continuous assessments during peak load or abnormal conditions and Reliability Coordinators and Operators should be allowed the flexibility to make reasoned judgments based on their knowledge of the system during normal conditions or during failures of assessment tools. Our support for an hourly interval is also based upon the recommendations of the NERC Real-time Tools Best Practices Task Force.             <p>On pages 156-158 of section 2 of their report, the RTBPTF proposes that a new requirement for "look-ahead analyses" be added to standards TOP-002 and IRO-004. Since IRO-008 is intended to replace IRO-004, the recommendation is applicable to IRO-008.</p> <p>Specifically, the recommendation as it pertains to RCs is paraphrased as follows: In order to assess approaching IROL violations, each Reliability Coordinator shall, at a minimum, perform one-hour-ahead Power Flow simulations during the following: + Occurrence of critical system event + Extreme load conditions + Large power transactions + Major planned outages. This recommended requirement would address the "expected" system conditions component of the proposed (and so-called) "Real Time" Assessment.</p> <p>The "existing" system conditions component should be covered by requirements for monitoring found elsewhere in the standards. The rationale for the RTBPTF recommendation came from a deficiency identified in the Blackout Report. Specifically, the report stated: "FE did not perform adequate hour-ahead operations planning studies after Eastlake 5 tripped off-line at 13:31 to ensure that FE could maintain a 30-minute</p> </li> </ol>
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Consideration of Comments on Draft 9 of IROL Standards

	<p>response capability for the next contingency. The FE system was not within single contingency limits from 15:06 to 16:06. In addition to day-ahead planning, the system should have been restudied after the forced outage of Eastlake</p> <p>5."The recommendation is supported by the findings of the RTBPTF based upon responses received from the task force's survey of RCs and TOPs. The survey showed that 47% of all respondents performed look-ahead studies at intervals less than one hour, and 80% perform such studies at intervals from one hour to one day. Also, 83% of the respondents perform these studies as needed. The survey results indicate that performing look-ahead studies when needed on at least an hourly basis is a prevailing practice. We suggest that the Standards Drafting Team work with the RTBPTF to incorporate their recommendation into IRO-008 in lieu of the proposed requirement R2.)</p> <p>We are also concerned about the requirements for evidence to validate compliance with the IRO-008-1 Standard as well as other standards. The compliance program seems to define the window of compliance being the 3 years between compliance audits. However, the IRO-008-1 standard only requires data be retained to demonstrate compliance for a rolling 30 day period. There appears to be a disconnect between the compliance program and the standard, which exposes the Reliability Coordinators to being found non-compliant. In other words, there appears to be a considerable window of time between an audit and the previous audit during which an entity would not have data to demonstrate that they met compliance expectations.] In many cases, the data retention sections in individual standards talk about a much shorter data retention expectation. For example, IRO-008-1 states, "The Reliability Coordinator shall retain evidence for Requirement R1, Measure M1 and Requirement R2, Measure M2 for a rolling 30 days. The Reliability Coordinator shall keep evidence for Requirement R3, Measure M3 for a rolling three months. The question is which data retention expectation is the entity going to be held to with regards to compliance and compliance audits? More clarity needs to be provided on what evidence must be provided in audits.</p>
<p><b>Response:</b></p>	<ol style="list-style-type: none"> <li>1. VSLs are not used to "measure" performance – they are used to categorize the different types of noncompliant performance that might be found. VSLs are intended to provide up to four different descriptions of varying degrees of noncompliant performance – with the lower VSL describing noncompliant performance that is close to fully compliant – and the severe VSL describing noncompliant performance where the performance measured is so far away from being compliant that either the performance is totally noncompliant or the performance is so non-compliant that the intent of the requirement has not been met at all. VSLs are not used to assess the reliability-related risk of the noncompliant performance. The drafting team disagrees that it is acceptable to only apply a penalty when there has been an incident or event. Standards should promote good performance that results in a reliable system – ignoring poor performance because nothing evil occurred to the system due to "luck" is not a concept supported for something as critical as looking at the system to see if an IROL has been exceeded.</li> <li>2. R1 and R2 – The requirements do not prescribe the use of any specific tools. If you don't have access to the EMS, you still have to do the Operational Planning Analysis and the Real-time Assessments – you can use engineering judgment in coordination with previous analyses and the latest available information, if needed.</li> <li>3. The "30 minutes" was selected as the threshold because when an IROL has been exceeded, the Reliability Coordinator must return the system to within the IROL in the IROL's <math>T_v</math> – and the IROL's <math>T_v</math> cannot exceed 30 minutes.</li> <li>4. Monitoring is a "how" not a reliability requirement that, by itself, results in a measurable performance. The drafting team has removed the</li> </ol>

## Consideration of Comments on Draft 9 of IROL Standards

monitoring requirements with the support of most stakeholders. R2 is intended to assure that entities perform assessments at regular intervals, and the drafting team selected 30 minutes because IROLs have to be resolved within their  $T_v$  – and  $T_v$  cannot be longer than 30 minutes.

The RTBPTF did not provide any comments in response to the posting of this set of standards.

The drafting team followed up with one of the commenters to more fully understand the above comments. The concern was really with the idea that R2 would require a mitigation plan for Real-time Assessments. It seems that the commenters did not see the definition of “Real-time Assessments”.

5. Requirements in standards are not designed to support “common practices” – they are designed to support what is needed for reliability. R2 is intended to assure that entities perform assessments at regular intervals, and the drafting team selected 30 minutes (with stakeholder support) because IROLs have to be resolved within their  $T_v$  – and  $T_v$  cannot be longer than 30 minutes.

The ERO Rules of Procedure Appendix 4C specify that the data retention period in the standard supersedes retaining data for the current year and all years since the last audit. See Appendix 4C Section 3.1.4 which states:

### 3.1.4 Scope of Compliance Audits

A Compliance Audit will include all Reliability Standards applicable to the Registered Entity monitored in the NERC Implementation Plans in the current and three previous years, and may include other Reliability Standards applicable to the Registered Entity. If a Reliability Standard does not require retention of data for the full period of the Compliance Audit, the Compliance Audit will be applicable to the data retention period specified in the Reliability Standard.

RC WG - reliability coordinator comments working group	No	R2 - does this real time assessment only mean state estimator or if state estimator is unavailable, can the RC use other tools to make a real time assessment to meet this requirement? If we can not use other tools then we do not agree with the VSL. If we can use other tools, then we agree with the VSL.
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**Response:** The term, “Real-time Assessment” is defined as follows and does not have to be performed using only a state estimator – the definition allows the use of other tools and processes:

An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

The definition was designed so that you could still conduct a real-time assessment, if needed, using readily available data collected through manual processes.

Operating Reliability Working Group	No	As proposed the VSLs do not allow any Real-time Assessments to be missed within a 24-hour period. However, in EOP-008-0, R1.8, the Reliability Coordinator is allowed a one-hour transition period to its backup site. It would seem appropriate that an allowance should be made for this transition in the VSLs for R2.
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**Response:** The real-time assessment can be conducted using manual data collection, if needed. The Reliability Coordinator is responsible for having processes in place that assure it can meet all its real-time requirements, even while in transition from its primary control facility. For example, responsibility for conducting the real-time assessments can be delegated to the Reliability Coordinator’s Transmission Operators. There is a drafting team working on revisions to EOP-008.

Hydro One Networks	No	For VSL requirement R1 we suggest the following: High: Missed performing an Operational Planning Analysis that covers all aspects of the requirement for one of 30 days; Severe: Missed performing an Operational Planning Analysis
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		that covers all aspects of the requirement for two or more of 30 days. As well, for VSL requirement R2 we suggest changing the phrase "within a 24-hour period" to "within a 30-day period". This will prevent daily occurrences of violations.
		<b>Response:</b> The proposed change would not prevent daily occurrences of violations. If an entity misses doing an Operational Planning Analysis, the responsible entity must self-report the violation. If the entity missed doing the Operational Planning Analysis for three days, then the entity would need to self-report the violation.
		The 30 days in the VSLs for R1 came from the data retention period for R1 in this standard – which is a rolling 30 days for R1. The data retention period was intended to ensure that there is sufficient data for the Compliance Enforcement Authority to measure compliance, without overwhelming the responsible entity. We do not agree that Reliability Coordinators should retain 12 rolling months of analyses to demonstrate compliance with this requirement since it would be burdensome to retain that much data.
		The proposed change also provides fewer variants of noncompliant performance – and limits the amount of “partial credit” an entity can be granted for attempting to meet compliance.
		Please see the revised VSLs for R2 – the drafting team added some language to clarify that the intent was to add boundaries to the amount of data that the compliance enforcement authority will review when determining compliance to support consistency.
FirstEnergy	Yes	You may want to remove the parenthetical reference to the requirement numbers at the end of each VSL. This is not needed since the requirement number is shown in the VSL table in column 1.
		<b>Response:</b> The drafting team left the reference numbers in at the request of NERC staff. The standards will be added to a relational database and the reference numbers will be useful.
Manitoba Hydro	Yes	
American Transmission Company LLC	Yes	
San Diego Gas and Electric Co.	Yes	
Entergy Services	Yes	

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4. The drafting team modified IRO-009-1 R1 and R2 by replacing the phrase, “in advance of real-time” with the phrase, “one or more days prior to the current day” to clarify the intent and measurability of these requirements. Do you agree with the change made to R1 and R2 in IRO-009-1?

**Summary Consideration:** Most commenters, except for those from within the NPCC Region agreed with the change. The commenters from the NPCC Region who disagreed with the change felt that the change may result in arguments over the phrase, “in advance of real-time,” and suggested that real time is ‘understood’ to be the current hour. The drafting team disagrees – the term, “real-time” is a defined term and its definition is, “Present time as opposed to future time,” which is significantly different from the “current hour.” These commenters suggested that the Reliability Coordinator have an action plan for all IROLs identified “one or more hours ahead of real time” or “beyond the current hour.” Because the requirements in the standard are intended to work cooperatively with the requirements to conduct Operational Analyses and Real-time Assessments, the proposed revision wasn’t adopted. The Operational Planning Assessment is looking at least at the day ahead – and the Real-time Assessment is looking at the actual system conditions – the proposed change would require adding a requirement for the Reliability Coordinator to conduct Operational Planning Assessments throughout the day for a look ahead at the remainder of today’s operation and isn’t practical.

The Reliability Coordinator has a responsibility to oversee the reliability of its Reliability Coordinator Area, and take what ever actions necessary to protect the reliability of the interconnection. The drafting team does not believe that the standard needs to tell the Reliability Coordinator to conduct additional studies and develop additional plans if the actual conditions do not match the studied conditions. It isn’t possible to have a plan for every possible instance of exceeding an IROL.

Organization/Group		Question 4 Comments:
Northeast Utilities	No	<p>We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day".</p> <p>And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".</p>
<p><b>Response:</b> The proposed modification was not adopted. The intent of this requirement is to ensure that, in real-time and the day ahead, the Reliability Coordinator is prepared to take whatever actions necessary, to prevent and/or mitigate instances of violating IROLs.</p> <p>There is no hole in the reliability process because if the Operational Planning Analysis does not project the potential IROL violation, then at a minimum, the next Real-time Assessment will detect it. It isn’t possible to have a plan for every possible instance of exceeding an IROL.</p> <p>The term, ‘real-time’ is defined as follows in the NERC Glossary of Terms Used in Reliability Standards: Present time as opposed to future time. Thus, we cannot make an assumption that “real-time” means the current hour.</p>		

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NPCC Regional Standards Committee, RSC	No	We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
<p><b>Response:</b> The proposed modification was not adopted. The intent of this requirement is to ensure that, in real-time and the day ahead, the Reliability Coordinator is prepared to take whatever actions necessary, to prevent and/or mitigate instances of violating IROLs.</p> <p>There is no hole in the reliability process because if the Operational Planning Analysis does not project the potential IROL violation, then at a minimum, the next Real-time Assessment will detect it. It isn't possible to have a plan for every possible instance of exceeding an IROL.</p> <p>The term, 'real-time' is defined as follows in the NERC Glossary of Terms Used in Reliability Standards: Present time as opposed to future time. Thus, we cannot make an assumption that "real-time" means the current hour.</p>		
Ontario IESO	No	We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hour prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
<p><b>Response:</b> The proposed modification was not adopted. The intent of this requirement is to ensure that, in real-time and the day ahead, the Reliability Coordinator is prepared to take whatever actions necessary, to prevent and/or mitigate instances of violating IROLs.</p> <p>There is no hole in the reliability process because if the Operational Planning Analysis does not project the potential IROL violation, then at a minimum, the next Real-time Assessment will detect it. It isn't possible to have a plan for every possible instance of exceeding an IROL.</p> <p>The term, 'real-time' is defined as follows in the NERC Glossary of Terms Used in Reliability Standards: Present time as opposed to future time. Thus, we cannot make an assumption that "real-time" means the current hour.</p>		
ISO RTO Council Standards Review Committee	No	We understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", with the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".
<p><b>Response:</b> The proposed modification was not adopted. The intent of this requirement is to ensure that, in real-time and the day ahead, the Reliability Coordinator is prepared to take whatever actions necessary, to prevent and/or mitigate instances of violating IROLs.</p> <p>There is no hole in the reliability process because if the Operational Planning Analysis does not project the potential IROL violation, then at a</p>		

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<p>minimum, the next Real-time Assessment will detect it. It isn't possible to have a plan for every possible instance of exceeding an IROL.</p> <p>The term, 'real-time' is defined as follows in the NERC Glossary of Terms Used in Reliability Standards: Present time as opposed to future time. Thus, we cannot make an assumption that "real-time" means the current hour.</p> <p>Earlier detection of a potential IROL violation could result in a more economic solution, but that is not a reliability issue</p>		
Hydro-Québec TransEnergie	No	<p>HQT understand that this change is to address possible arguments over what "in advance of real time" really means. However, this change may result in another argument over the coverage of the time period "beyond next hour to the rest of the current day". And with this change, one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time" or beyond current day. This may leave a hole in reliable operations. To fill this potential "hole", we suggest the "in advance of real time" be replaced with "one or more hours prior to real time", which the real time being understood, or defined, to be current hour. Alternatively, the phrase could be replaced with "beyond the current hour".</p>
<p><b>Response:</b> The proposed modification was not adopted. The intent of this requirement is to ensure that, in real-time and the day ahead, the Reliability Coordinator is prepared to take whatever actions necessary, to prevent and/or mitigate instances of violating IROLs.</p> <p>There is no hole in the reliability process because if the Operational Planning Analysis does not project the potential IROL violation, then at a minimum, the next Real-time Assessment will detect it. It isn't possible to have a plan for every possible instance of exceeding an IROL.</p> <p>The term, 'real-time' is defined as follows in the NERC Glossary of Terms Used in Reliability Standards: Present time as opposed to future time. Thus, we cannot make an assumption that "real-time" means the current hour.</p>		
FirstEnergy	No	<p>It should be clear that the main intent is to have IROL mitigation plans in place for the current operating day. For clarity, we suggest the following replacements for requirements R1 and R2.</p> <p>R1 For the current day operating conditions, each Reliability Coordinator shall have Operating Processes, Procedures or Plans that identify mitigation actions it shall take or actions it shall direct others to take up to and including load shedding that can be implemented in time to prevent exceeding any of its IROL conditions. The mitigation actions shall be available one or more days prior to the current operating day.</p> <p>R2 For the current day operating conditions, each Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify mitigation actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding any of its IROL conditions, such that the IROL is relieved within the IROL's Tv. The mitigation actions shall be available one or more days prior to the current operating day.</p>
<p><b>Response:</b> The main intent of this standard is to be prepared for identified IROLs in any operating horizon. The proposed language states that you must have a plan for "all" IROLs identified one or more days prior to the current day –it isn't possible to have a plan for every possible IROL.</p>		
ISO New England Inc	No	<p>With this change one could interpret that the RC does not need to prepare for action plans for those IROLs not identified in "real-time," which (we believe) is not the intent. We therefore suggest the "in advance of real-time" be replaced with "one or more hours prior to real-time", with real-time being defined as the current hour.</p>
<p><b>Response:</b> The proposed modification was not adopted. The intent of this requirement is to ensure that, in real time and the day ahead, the Reliability Coordinator is prepared to take whatever actions necessary, to prevent and/or mitigate instances of violating IROLs.</p>		



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<p>There is no hole in the reliability process because if the operational planning analysis does not project the potential IROL violation, then at a minimum, the next real-time assessment will detect it. It isn't possible to have a plan for every possible instance of exceeding an IROL.</p>		
American Transmission Company LLC	Yes	ATC agrees that the phrase "one or more days prior to the current day" provides additional clarity.
<p><b>Response:</b> The drafting team appreciates your support of this modification.</p>		
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	Yes	
Manitoba Hydro	Yes	
Operating Reliability Working Group	Yes	
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	
San Diego Gas and Electric Co.	Yes	
Hydro One Networks	Yes	

5. The drafting team modified the Violation Severity Levels for IRO-009. Do you agree with the new VSLs?

**Summary Consideration:** Most commenters who disagreed with the proposed VSLs made one of the following recommendations:

Eliminate the “High” VSL for Requirement R3 because the VSL focuses on the quality of the action plan rather than on whether action was taken. The drafting team reviewed the requirement and confirmed that the requirement is focusing on ‘acting’ and eliminated the “High” VSL as proposed.

Eliminate the first of the two conditions for Requirement 4 that could result in a “Severe” VSL. The drafting team did adopt this suggestion as the second condition, by itself, fully described the noncompliant performance that meets the criteria for a “Severe” VSL.

Eliminate the “Severe” VSL for Requirement R4 when the Reliability Coordinator makes an unsuccessful attempt to return the system to within its IROLs within the IROL’s  $T_v$  or move the VSL to “High”. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s  $T_v$  was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s  $T_v$ , then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.

Organization/Group		Question 5 Comments:
Northeast Utilities	No	We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform either one, its violation is deemed to be high. If it fails to perform both, then it is deemed to have fully violated the requirement which is severe.
<p><b>Response:</b> The Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL with its <math>T_v</math> because of the potential impact on the interconnection if the IROL is exceeded for time greater than IROL <math>T_v</math> - instability, uncontrolled separation, or cascading outages. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s <math>T_v</math> was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s <math>T_v</math>, then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.</p>		
NPCC Regional Standards Committee, RSC	No	We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform either one, its violation is deemed to be high. If it fails to perform both, then it is deemed to have fully violated the requirement which is severe.

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Organization/Group		Question 5 Comments:
<p><b>Response:</b> The Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL with its <math>T_v</math> because of the potential impact on the interconnection if the IROL is exceeded for time greater than IROL <math>T_v</math> - instability, uncontrolled separation, or cascading outages. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s <math>T_v</math> was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s <math>T_v</math>, then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.</p>		
Ontario IESO	No	<p>We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a) take actions without delay (within 5 minutes) and b) correct the situation of IROL being exceeded. Hence, if an RC fails to perform one of the two requirements, its violation is deemed to be High. If it fails to perform both, then it is deemed to have fully violated the requirement and hence should be deemed a Severe violation.</p>
<p><b>Response:</b> The Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL with its <math>T_v</math> because of the potential impact on the interconnection if the IROL is exceeded for time greater than IROL <math>T_v</math> - instability, uncontrolled separation, or cascading outages. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s <math>T_v</math> was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s <math>T_v</math>, then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.</p>		
ISO New England Inc	No	<p>We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC who did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and b. correct the situation of IROL being exceeded. Hence, if an RC fails to perform one of the two requirements, its violation is deemed to be High. If it fails to perform both, then it is deemed to have fully violated the requirement and hence should be deemed a Severe violation.</p>
<p><b>Response:</b> The Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL with its <math>T_v</math> because of the potential impact on the interconnection if the IROL is exceeded for time greater than IROL <math>T_v</math> - instability, uncontrolled separation, or cascading outages. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s <math>T_v</math> was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s <math>T_v</math>, then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.</p>		
ISO RTO Council Standards Review Committee	No	<p>We agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC who did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform one of the two requirements, its violation is deemed to be High. If it fails to perform both, then it is deemed to have fully violated the requirement and hence should be deemed a Severe violation.</p>
<p><b>Response:</b> The Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL with its <math>T_v</math> because of the potential impact on the interconnection if the IROL is exceeded for time greater than IROL <math>T_v</math> - instability, uncontrolled separation, or cascading outages. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s <math>T_v</math> was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s <math>T_v</math>, then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.</p>		

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Organization/Group		Question 5 Comments:
Hydro-Québec TransEnergie	No	HQT agree with all of the VSLs except one. The second Severe condition for R4 appears to be giving no recognition that the RC did take corrective actions without delay (within 5 minutes) but was unable to correct the situation of IROL being exceeded. We suggest that this be moved to High as the second condition. In fact, R4 contains 2 requirements: a. take actions without delay (within 5 minutes) and correct the situation of IROL being exceeded. Hence, if an RC fails to perform either one, its violation is deemed to be high. If it fails to perform both, then it is deemed to have fully violated the requirement which is severe.
<p><b>Response:</b> The Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL with its <math>T_v</math> because of the potential impact on the interconnection if the IROL is exceeded for time greater than IROL <math>T_v</math> - instability, uncontrolled separation, or cascading outages. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s <math>T_v</math> was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s <math>T_v</math>, then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.</p>		
Hydro One Networks	No	<p>We agree with the VSLs for requirements 1 and 2. However the high VSL for requirement 3 is not appropriate because it tries to judge the effectiveness of the Operating Processes, Procedures or Plans. Requirement 4 provides for judgment of the effectiveness of the Processes, Procedures or Plans on a basis of being able to mitigate the exceeded IROL within the its <math>T_v</math>.</p> <p>As well, R4 includes two requirements: 1) act or direct, without delay, to mitigate the instance of exceeding the IROL; 2) mitigate this instance within the <math>T_v</math>. We suggest that if the RC does not meet both requirements the violation level should be severe and if the RC does not meet one of the requirements the violation level should be high.</p>
<p><b>Response:</b> The team removed the “High” VSL for R3 in support of your comment. The requirement is to “act” not to “prevent”.</p> <p>The Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL within its <math>T_v</math> because of the potential impact on the interconnection if the IROL is exceeded for time greater than IROL <math>T_v</math> -- instability, uncontrolled separation, or cascading outages. The suggestion to modify the VSLs and make the VSL “High” if the Reliability Coordinator make an attempt to resolve the IROL within the IROL’s <math>T_v</math> was not adopted because if the Reliability Coordinator does not resolve the IROL within the IROL’s <math>T_v</math>, then the intent of the requirement has not been met at all – and this type of violation is classified as a “Severe” VSL.</p>		
RCCWG - reliability coordinator comments working group	No	<p>R4 High- in the VSL does "acting and directing" include contacting the entity and gathering information and data or does it strictly mean issuing a directive?</p> <p>R5 Severe - eliminate the top VSL, this describes how a failure to mitigate occurred, the issue is there was a failure to mitigate. Also, if an RC issues a directive to mitigate an IROL and the entity fails to comply or is unable to comply is the RC in violation of this requirement?</p>
<p><b>Response:</b> The requirement is as stated – acting or directing. Contacting the entity could be evidence of acting, and if there were evidence of the contact, then this would be considered acting “without delay.” There could also be other types of “acting” – such as calling up screen displays to research the problem – or noting in the log that an action already taken just before the instance of exceeding the IROL was expected to resolve the IROL within its <math>T_v</math> and no further action is needed.</p> <p>The drafting team believes you intended to reference Requirement R4 rather than R5 – and the drafting team did eliminate the top VSL. The</p>		

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Organization/Group		Question 5 Comments:
		<p>Reliability Coordinator is the functional entity with the highest level of authority – and the Reliability Coordinator must execute its authority to resolve any IROL within its <math>T_v</math> because of the potential impact on the interconnection - instability, uncontrolled separation, or cascading outages. If a Reliability Coordinator issues a directive that some other entity does not comply with, then the Reliability Coordinator is still responsible for preventing the violation of the IROL for time greater than the IROL's <math>T_v</math>.</p>
Operating Reliability Working Group	No	<p>The High VSL for R4 contains an additional requirement that is not in R4. The VSL defines 'without delay' as being five minutes or less. The 'five minute' requirement should be deleted from the VSL.</p>
		<p><b>Response:</b> The drafting team does not believe that it has added a new requirement. The standard uses the language “without delay” and the measures look for types of evidence that could be reasonably interpreted as evidence that the Reliability Coordinator took some action – making a phone call, acknowledging an alarm, calling up an EMS display – all of these are evidence that the Reliability Coordinator took some recordable action to investigate the situation and respond to remedy the situation. The drafting team did not intend for the “5 minutes” to mean that a directive had to be issued within that 5 minutes.</p>
American Transmission Company LLC	No	<p>Severe VSL for R4ATC does not agree with the language in the Severe VSL for Requirement 4. The purpose of this VSL is for a <math>T_v</math> violation. ATC recommends that the first description be deleted and only the second description be kept. If the SDT does not agree they should provide a reason for the two descriptions.</p>
		<p><b>Response:</b> The drafting team adopted your suggestion to delete the first description of a Severe VSL from R4.</p>
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	No	<p>1. The Violation Security Levels for R3 and R4 impose additional requirements that are not in the standard. For R3, it seems inappropriate that the Violation Severity Level should be based upon the effectiveness of the plan to prevent the system from entering an IROL in real-time. The dynamics topology and unit commitment/dispatch of an electric system are constantly changing and no specific occurrence of an SOL or IROL can be accurately represented in planning case studies. It is thus impractical or impossible to devise a perfect process for mitigating each and every instance during which a known IROL may manifest and persist as conditions change during the IROL <math>T_v</math>.</p> <p>2. In R4, if the trigger limit for initiating action is five (5) minutes, then that limit should be explicitly included in the requirements and not introduced for the first time in the measurement criteria. Furthermore, we feel that a time of five (5) minutes is arbitrary and implementation of correct action is the primary requirement. Operators will be under tremendous pressure to work out a solution when an IROL is exceeded and satisfy the five minute requirement. We feel that it is more important to 1) recognize that an IROL has been violated, 2) determine the correct process or procedure required to mitigate the identified IROL, 3) modify the identified generic process or procedure to meet specific real time system conditions as required and, 4) implement the modified process or procedure while at the same time maintaining continuous communications with all parties involved and simultaneously documenting actions being taken as required for NERC audits. It is not clear to us exactly how the five (5) minute trigger adds any value to this process. If the goal is to mitigate the IROL within the IROL <math>T_v</math>, and the actions are successful, what impact does a five (5) minute trigger requirement add to the process? WE STRONGLY SUGGEST THAT THE “HIGH” SEVERITY LEVEL SHOULD BE ELIMINATED FOR R3 AND R4.</p>
		<p><b>Response:</b></p> <p>1. The drafting team removed the High VSL for R3 based on stakeholder comments indicating that the VSL is inappropriate because it judges the quality of the actions – the Requirement is to “act” not to “prevent.”</p>

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Organization/Group		Question 5 Comments:
		<p>The intent of R4 is for the Reliability Coordinator to act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's T<sub>v</sub>. Note that many entities include a default paragraph that is included in all of its operating procedures that clearly gives the real-time system operator the authority to use operating knowledge and experience to deviate from a plan when the actual system conditions don't match the studied or planned conditions. Adding this paragraph allows the system operator to make modifications to the plans, as needed, to achieve the objective of preventing or mitigating the instance of exceeding an IROL.</p> <p>2. The drafting team did not modify the standard to include the reference to the 5 minute delay because this sends a message that it is acceptable to wait before taking action – the intent of the 5 minute period was to provide a boundary prior to which there needed to be some recordable action to demonstrate that action had been taken. The standard uses the language “without delay” and the measures look for types of evidence that could be reasonably interpreted as evidence that the RC took some action – making a phone call, acknowledging an alarm, calling up an EMS display – all of these are evidence that the RC took some recordable action to investigate the situation and respond to remedy the situation. The drafting team did not intend for the “5 minutes” to mean that a directive had to be issued within that 5 minutes.</p>
FirstEnergy	Yes	<p>For R4, Severe VSL - We recommend retaining only the text below the "OR" statement. The text above is duplicative and adds no additional value since the end result is that the IROL is not mitigated within the allowable T<sub>v</sub> timeframe.</p> <p><b>Response:</b> The drafting team adopted this suggestion and deleted the text above the “OR” for the severe VSL for R4. We thank you for your support.</p>
Entergy Services	Yes	
Manitoba Hydro	Yes	
San Diego Gas and Electric Co.	Yes	

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**6. The drafting team modified the Violation Severity Levels for IRO-010. Do you agree with the new VSLs?**

**Summary Consideration:** While most stakeholders who responded to this question indicated agreement with the proposed VSLs, some stakeholders indicated that the VSLs for R1 should be modified to reflect that missing a process for obtaining real-time operating data when it becomes unavailable contributes more to the intent of the requirement than having the data in the wrong format – and the drafting team modified the VSLs for R1 to reflect this.

<b>Organization/Group6:</b>		<b>Question 6 Comments:</b>
RCCWG - reliability coordinator comments working group	No	What is the expectation for the process when your automated data is not available? Does freezing the State Estimator value and then getting data via phone and fax suffice?
<p><b>Response:</b> Requirement R1.4 states that the Reliability Coordinator’s data specification must include the following:                      Process for data provision when automated Real-Time system operating data is unavailable.                      The standard does not specify “how” to provide the data to the Reliability Coordinator. Freezing the state estimator values and getting the data via phone may be acceptable to the Reliability Coordinator.</p>		
Manitoba Hydro	No	R1 - What constitutes a "complete data specification"? TOP-005-0 Attachment 1, which will become a Technical Reference, needs a tune up. What is the determining factors when identifying transmission and other facilities as "key"? What size of generator is the RC concerned with in regards to on/off status, AVR status, PPS status, MW & Mvar output?
<p><b>Response:</b> Agree that the attachment needs a “tune up” – it is not comprehensive enough to meet the data needs of all Reliability Coordinators. In Order 693, FERC did direct that special protection systems should be added to the list of items in Attachment 1. Note that the revised implementation plan no longer recommends the retirement of Attachment 1. TOP-005 R3 references this Attachment so it is still needed in the standard.                      Each Reliability Coordinator has the authority to identify what data it needs – and the data specification must address all subrequirements in Requirement R1.</p>		
Operating Reliability Working Group	No	The Lower and Moderate VSLs for R1 should be reversed. We believe that it is more important to have a process for obtaining real-time operating data when it becomes unavailable than having the data in the wrong format. At least you have the data.
<p><b>Response:</b> Agreed – the drafting team adopted your suggestion and switched the VSLs.</p>		
San Diego Gas and Electric Co.	No	In the revised IRO-010 Violation Severity Levels Table, there is no provision for less than 100% compliance for real-time data sent by the TO/TOP to the RC. Providing data at a level greater than 95% but less than 100% is cause for a “Lower” Violation Severity Level. That level rises as less data is provided, to a maximum of “Severe” when less than 75% of the requested data is sent to the RC. Real time data typically has some level of availability associated with it that allows for the inherent nature of real time data being less than 100% complete. Examples may include the failure of field equipment such as RTUs, communication circuits, instrumentation, and other events

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<b>Organization/Group</b>		<b>Question 6 Comments:</b>
		<p>that could impact 100% data availability such as missed RTU scans, loss of data when systems are being shifted to backup EMS systems, etc.</p> <p>Requirement R3 and the Violation Severity Level Violation table need to be re-written to correlate with Requirement 1.4 that would include an exemption for short-term real time data failures or outages when determining the Violation Severity Level, perhaps with language such as "excluding unavailable real-time data (R1.4)."</p>
<p><b>Response:</b>                      The VSL is only applied when there has been an identified violation – the VSLs provide up to four categories of noncompliant performance that might have been seen by the Compliance Enforcement Authority when it assessed compliance.</p> <p>Under R1.4 any acceptable tolerance for missing data will be included in the Reliability Coordinator's data specification.</p>		
Hydro One Networks	No	<p>We agree with VSLs for R2 and R3 however, we disagree with the VSLs for R1. Example, failing to specify a process for data provision when the automated Real-time system operating data is unavailable could result in the RC being "blind" to what is going on in the system and render them unable to act or direct others to act. We suggest that missing any one of R1's sub-requirements is a High VSL and having no data specification is a Severe VSL.</p>
<p><b>Response:</b> Based on other comments, the drafting team did modify the Lower and Moderate VSLs so that the failure to comply with R1.2 is now "lower" and failure to comply with R1.4 is "moderate". The drafting team attempted to use all four categories of VSLs to provide the compliance enforcement authority with as many options for categorizing noncompliant performance as practicable.</p>		
American Transmission Company LLC	No	<p>VSL for R3: The VSLs do not seem to take into account the frequency of not sending the data. The SDT should provide additional detail within each VSL. How will the percentage be determined over time?</p>
<p><b>Response:</b> The data specification must identify how often data and information must be supplied – the VSLs only categorize the severity of the violation when the data and information was not provided 'as specified' in the Reliability Coordinator's data specification.</p> <p>The VSL is only applied when there has been an identified violation – the VSLs provide up to four categories of noncompliant performance that might have been seen by the compliance enforcement authority when it assessed compliance.</p>		
Northeast Utilities	Yes	
NPCC Regional Standards Committee, RSC	Yes	
Hydro-Québec TransEnergie	Yes	
Entergy Services	Yes	
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	



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Organization/Group	6:	Question 6 Comments:
Ontario IESO	Yes	
ISO RTO Council Standards Review Committee	Yes	
FirstEnergy	Yes	
ISO New England Inc	Yes	

**7. The drafting team modified the implementation plan to reflect the modifications made based on the elimination of IRO-007-1 Requirement R1. Do you agree with the modifications made to the implementation plan?**

**Summary Consideration:** Many stakeholders who responded to this question disagreed with the recommended retirement of EOP-001 R2 and the recommended modification of IRO-005 R13. In each case the drafting team considered the comments provided, but continues to recommend the retirements or revisions for the reasons provided below.

**EOP-001 R2** – The reason stated for objecting to the recommended retirement of EOP-001 Requirement R2 was aimed at concern that eliminating this requirement would eliminate the requirement that the Transmission Operator have load reduction plans in place that can be executed within 30 minutes.

Here are Requirements R2, R3, and parts of R4 from EOP-001:

- R2.** The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.
- R3.** Each Transmission Operator and Balancing Authority shall:
  - R3.1.** Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R3.2.** Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R3.3.** Develop, maintain, and implement a set of plans for load shedding.
  - R3.4.** Develop, maintain, and implement a set of plans for system restoration.
- R4.** Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R4.1.** Communications protocols to be used during emergencies.
  - R4.2.** A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

The drafting continues to recommend the retirement of EOP-001 R2 for the following reasons:

The retirement of the EOP-001 R2 does not resolve the Transmission Operator from having emergency load reduction plans – EOP-001 R3.3 and R4.2 (shown in blue above) still apply to the Transmission Operator and require the Transmission Operator to develop, maintain and implement a set of plans for load shedding that can be executed within the necessary timeline.

The existing EOP-001 R2 gives the impression that all load reduction plans developed to bring the system to within IROLs must be capable of success within 30 minutes – and that doesn't support the new requirements which state the IROL must be resolved within the IROL's  $T_v$ , which can be shorter than 30 minutes.

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The existing EOP-001 R2 gives the impression that load reduction plans are the only types of plans that can be developed in advance to resolve IROLs, and that isn't technically correct. Implementing a load reduction plan is one of several different methods that can be used to resolve IROLs.

**IRO-004 R4** – The reason stated for objecting to the retirement of the following requirement from IRO-005 R4 is that the requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses.

**R4.** Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.

The drafting continues to recommend the retirement of IRO-004 R4 for the following reason:

Although the commenters indicate that the intent of this requirement is to provide data to entities other than the Reliability Coordinator, the drafting team disagrees. The intent of IRO-004 R4 is to provide data to Reliability Coordinators. TOP-002 is focused on requiring the Transmission Operators to collect the data they need for their own analyses.

**IRO-005 R13** – The reason stated for objecting to the retirement of the following text from IRO-005 Requirement R13 is that the same language is not covered in any of the new standards:

**R13.** Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection.

The drafting team continues to recommend the retirement of the first sentence in IRO-005 R13 for the following reason:

The first sentence in IRO-005 R13 assumes that the Reliability Coordinator can see all System Operating Limits and has direct communication with all operating entities. The Reliability Coordinator doesn't necessarily see the actions of the Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities to direct them with respect to operating within SOLs. The Reliability Coordinator sees the effect of their actions, and directs actions for the Generator Operators, Transmission Service Providers, Load-serving Entities and Purchasing-selling Entities through Transmission Operators and Balancing Authorities.

In addition, during the development of the measures and compliance elements for IRO-005, the Missing Measures and Compliance Elements Drafting Team determined that it could not develop a measure for the first sentence in R13 because the Reliability Coordinator cannot ensure that entities will "operate to prevent the likelihood" of something happening.

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Organization/Group		Question 7 Comments:
Northeast Utilities	No	<p>We agree with some but not all of the proposed changes to the other standards.</p> <p>(1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.</p> <p>(2) IRO-002 R2: We agree with retiring this requirement.</p> <p>(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4.</p> <p>This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to be incorporated in an appropriate standard.</p> <p>(4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.</p> <p>(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.</p> <p>(b) For R13, the Implementation Plan says "retiring" but it should read "revising".</p> <p>We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." R13 actually contains two requirements that are not covered by the new IRO-009:</p>

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Organization/Group	Question 7 Comments:
	<p>(a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change.</p> <p>(b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence.</p> <p>(5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change.</p> <p>(6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 and R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference.</p> <p>(7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.</p>

**Response:**

EOP-001 R2 - The drafting team believes that load reduction plans are just one of many tools that can be used to resolve IROLs.

IRO-004 R4 - The requirement does not specify what functional entity receives the data – but the standard is built on the assumption that the data is provided to the Reliability Coordinator – there are no requirements in the standard for any entity to use the data, except the Reliability Coordinator.

The IRO standards are intended to address reliability coordination at the Reliability Coordination level – implying that IRO-004 R4 requires data to be shared with the Transmission Operator and Transmission Service Provider seems to be implying more than what was intended. TOP-002 is focused on requiring the Transmission Operators to collect the data they need for their own analyses.

IRO-005 R13 - The drafting team agrees that the implementation plan should have indicated that drafting team recommends, “revising” R13 and has corrected this typographical error.

IRO-005 R13 - The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs. If the Reliability Coordinator has a System Operating Limit that it knows can become an IROL, then that Reliability Coordinator should be operating so as to preclude exceeding that limit.

The drafting team believes that the second part of R13 that is proposed for deletion is technically incorrect as currently embodied in the standard. The Reliability Coordinator does oversee the actions of the Transmission Operators and Balancing Authorities, and there are requirements that

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Organization/Group		Question 7 Comments:
		<p>address Reliability Coordinator actions to keep these entities operating within limits, but the Reliability Coordinator doesn't necessarily see the actions of the Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities to direct them with respect to operating within SOLs. The Reliability Coordinator sees the effect of their actions, and directs actions for the Generator Operators, Transmission Service Providers, Load-serving Entities and Purchasing-selling Entities through Transmission Operators and Balancing Authorities.</p> <p>TOP-005 – Attachment 1 - The revised implementation plan no longer recommends the retirement of Attachment 1. TOP-005 R3 references this Attachment so it is still needed in the standard.</p>
<p>NPCC Regional Standards Committee, RSC</p>	<p>No</p>	<p>We agree with some but not all of the proposed changes to the other standards.</p> <p>(1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.</p> <p>(2) IRO-002 R2: We agree with retiring this requirement.</p> <p>(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to be incorporated in an appropriate standard.</p> <p>(4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.</p> <p>(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.</p> <p>(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL</p>

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Organization/Group		Question 7 Comments:
		<p>or IROL violation in another area of the Interconnection." R13 actually contains two requirements that are not covered by the new IRO-009:</p> <p>(a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change.</p> <p>(b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence.</p> <p>(5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change.</p> <p>(6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 and R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference.</p> <p>(7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.</p>
<p><b>Response:</b> Please see the <a href="#">Summary Consideration and the Response to Northeast Utilities</a>.</p>		
Hydro-Québec TransEnergie	No	<p>HQT agree with some but not all of the proposed changes to the other standards.</p> <p>(1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.</p> <p>(2) IRO-002 R2: We agree with retiring this requirement.</p> <p>(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to be</p>

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Organization/Group		Question 7 Comments:
		<p>incorporated in an appropriate standard.</p> <p>(4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.</p> <p>(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.</p> <p>(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." R13 actually contains two requirements that are not covered by the new IRO-009:</p> <p>(a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change.</p> <p>(b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence.</p> <p>(5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change.</p> <p>(6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 and R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference.</p> <p>(7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.</p>
<p><b>Response:</b> Please see the <a href="#">Summary Consideration and the Response to Northeast Utilities</a>.</p>		
Ontario IESO	No	<p>We agree with some but not all of the proposed changes to the other standards.</p> <p>(1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented</p>



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Organization/Group	Question 7 Comments:
	<p>within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.</p> <p>(2) IRO-002 R2: We agree with retiring this requirement.</p> <p>(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to have a "home".</p> <p>(4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.</p> <p style="padding-left: 40px;">(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.</p> <p style="padding-left: 40px;">(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection" actually contains two requirements that are not covered by the new IRO-009:</p> <p style="padding-left: 80px;">(a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change.</p> <p style="padding-left: 80px;">(b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence.</p> <p>(5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change.</p>

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Organization/Group		Question 7 Comments:
		<p>(6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 ad R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference.</p> <p>(7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.</p>
<p><b>Response:</b> Please see the <a href="#">Summary Consideration and the Response to Northeast Utilities</a>.</p>		
ISO RTO Council Standards Review Committee	No	<p>We do not agree with all of the proposed changes.</p> <p>(1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.</p> <p>(2) IRO-002 R2: We agree with retiring this requirement.</p> <p>(3) IRO-004-1 ? Reliability Coordination? Operations Planning: retire entire standard (R1 through R6). We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc. reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to have a "home".</p> <p>(4) IRO-005-2? Reliability Coordination? Current Day Operations: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.</p> <p>(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.</p> <p>(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL</p>

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Organization/Group		Question 7 Comments:
		<p>or IROL violation in another area of the Interconnection." actually contains two requirements that are not covered by the new IRO-009:</p> <p>(a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change.</p> <p>(b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence.</p> <p>(5) TOP-003-0? Planned Outage Coordination Modify R1.2. We agree with this change.</p> <p>(6) TOP-005-1? Operational Reliability Information: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 ad R1.1 and the proposed conversion of Attachment 1 into a reference. But there doesn't seem to be a draft reference document posted. When the new IRO standards go into effect, the reference documents will need to be available. Please elaborate on the timing and the process for posting and implementing the reference.</p> <p>(7) TOP-006-1? Monitoring System Conditions Voltage and Reactive Control: Modify R4. We agree with this change.</p>
<p><b>Response:</b> <a href="#">Please see the Summary Consideration and the Response to Northeast Utilities.</a></p>		
ISO New England Inc	No	<p>We do not agree with all of the proposed changes.</p> <p>(1) EOP-001 R2: We do not agree with removing this requirement, which says: "The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes." This requirement does not equate to the Transmission Operator developing plans for mitigating IROLs, which is the role of the RC. In fact, this requirement holds the TOP responsible for having the load reduction plan in place ahead of real time so that when directed by the RC, it can execute the plan to assist in mitigating the IROL violation. While the IRO-008 to IRO-010 standards give the RC the authority and the flexibility to direct the TOP to do so, having the plan in advance and be ready for execution is not covered by these IRO standards. Further, the amount and timing that the TOP is able to achieve with load reduction must be known to the RC ahead of real time for it to consider the effectiveness of the plan's execution in support of the mitigating action.</p> <p>(2) IRO-002 R2: We agree with retiring this requirement.</p> <p>(3) IRO-004-1: We agree with retiring this standard since all requirements are covered elsewhere except R4. This requirement is intended to provide system information not just for the RC within whose area the BA, TOP, etc.</p>

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Organization/Group		Question 7 Comments:
		<p>reside, but also for other RCs and TOPs, TSPs for system modeling/consideration for their respective specific uses. This requirement needs to have a "home".</p> <p>(4) IRO-005-2: Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17.</p> <p>(a) We agree with retiring R2, R3, R5, R16 and R17, and revising R9 and R14.</p> <p>(b) For R13, the Implementation Plan says "retiring" but it should read "revising". We agree with the proposed revision to the part on operating to the most limiting parameter, but do not agree with retiring that part pertaining to ensuring the SOLs and IROLs are not exceeded. This part, which reads: "Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection." actually contains two requirements that are not covered by the new IRO-009:</p> <p>(a) IRO-009 deals with IROL only; the RC needs also to be aware of the SOL situation since an SOL may become an IROL as system conditions change.</p> <p>(b) the requirement also holds the RC responsible for ensuring that the entities within the RC area operate to prevent situations that could result in a SOL or IROL violation in another area of the Interconnection." This is not covered by the new IRO-009. We therefore suggest that R13 be retained with only the revision to remove "Reliability Coordinator and its" from the second sentence.</p> <p>(5) TOP-003-0: Modify R1.2. We agree with this change.</p> <p>(6) TOP-005-1: Retire R1 and R1.1 and convert Attachment 1 into a reference. We agree with retiring R1 ad R1.1 and the proposed conversion of Attachment 1 into a reference.</p> <p>(7) TOP-006-1: Modify R4. We agree with this change.</p>
<p><b>Response:</b> <a href="#">Please see the Summary Consideration and the Response to Northeast Utilities.</a></p>		
Hydro One Networks	No	<p>We do not agree with the elimination of EOP-001-0 R2 as the RC and TOP must work together in planning how to implement load reduction.</p> <p>We do not agree with retiring R3 of IRO-004-1. Where SOLs and IROLs are known at least a day prior to the current day, the RC should have enough time to "coordinate" the development of action plans required to return transmission loading to within acceptable SOLs and IROLs with its Transmission Operators and Balancing Authorities. Otherwise how does the RC know if their plan is feasible or effective? Developing "effective" plans to mitigate SOLs and IROLs are a operation planning function and therefore belong in the IRO-004-1 Reliability Coordination - Operations Planning standard.</p>

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Organization/Group	Question 7 Comments:
	<p>We do not agree with the retirement of IRO-005-2 R5. We agree that the RC may not be the responsible entity for SOLs violations however; it would be more prudent to modify the requirement instead of retiring it completely. Perhaps take "SOL" out of the requirement and create a new requirement having the TOP responsible for SOL violations.</p> <p>There is confusion on whether you want to retire or modify IRO-005-2 R13 (page 3 verses page 20). We suggest modifying R13 by separating it into two separate requirements. The first having the RC responsible for ensuring all entities operate to prevent actions in their Reliability Coordinator Area that results in IROL violations in another area of the interconnection. The second requirement to have these same entities excluding the RC, to always operate the BES to the most limiting parameter.</p> <p>For TOP-003, TOP-005 and TOP-006, we believe a SAR should be initiated to "clean-up" standards &amp; requirements that may be redundant or incorrect as apposed to retiring them within an implementation plan which pertains to a different set of standards.</p>
<p><b>Response:</b></p> <p>EOP-001 R2 - The drafting team believes that load reduction plans are just one of many tools that can be used to resolve IROLs.</p> <p>IRO-004 R3 – The requirement does not recognize the authority of the Reliability Coordinator, and therefore the drafting team believes that the new requirements in IRO-009 (R1 and R2) are superior. Requirement R3 in IRO-004 gives the Reliability Coordinator an equal position with Transmission Operators and Balancing Authorities in developing action plans. The requirement is ambiguous because it isn't clear which entity has final authority in developing the action plan if the responsible entities can't agree on the best action to take. In addition, the R3 is aimed solely at "transmission loading" – the intent should be to return the bulk power system to within limits – and this may involve moving generation, modifying VAR flows or reserves, or other actions. Note that the standard does require having a plan for every identified IROL as per R1 and R2 of IRO-009-1.</p> <p>IRO-005 R5 – This requirement is not technically correct – it has multiple tasks embedded in a single requirement, and is written as though the actions should be performed sequentially. First, the Reliability Coordinator may not have the capability of seeing all SOLs. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits. When a limit has been exceeded, if it is an IROL, the Reliability Coordinator needs to focus on relieving the limit, and in some cases this is more important than determining what caused the IROL. In the new FAC standards, it is clear that each IROL must have its own IROL Tv – and the Tv may not be longer than 30 minutes – leaving that language in this requirement would directly conflict with the new standard that requires the IROL to be resolved within Tv – not within 30 minutes.</p> <p>IRO-005 R13 - There was a typographical error in the implementation plan – and this has been corrected. R13 is recommended, as shown in the table and in the red line version of IRO-005 that was posted for review, for revision, not for retirement.</p> <p>For standards that were initiated prior to Version 0, the Standards Committee has authorized drafting teams to recommend the modification/retirement of requirements in Version 0 standards that are replaced/modified by an associated Version 1 requirement. The reason for this authorization is because the Version 1 drafting teams initiated their SARs before the Version 0 effort was started. Note that the recommended</p>	

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Organization/Group		Question 7 Comments:
American Transmission Company LLC	No	<p>modifications are limited to those associated with requirements that are being replaced or revised as a result of the three remaining new IROL standards. The ballot for the IROL standards will include the recommended retirements and revisions. The IROL SDT limited its recommendations for retirements and revisions to those requirements that were technically incorrect based on the proposed IROL standards or were redundant with requirements in the proposed IROL standards.</p> <p>Issue 1: The implementation plan states that all of IRO-004-1 will be deleted when IRO-008, 009 and 010 are approved. Requirement 7 in IRO-004-1 is not being covered in any of the proposed new standards. The SDT needs to document the justification behind the deletion of R7 in IRO-004-1 before the entire standard can be deleted.</p> <p>Issue 2: ATC does not agree that IRO-005-1 R2 is duplicative of IRO-010-1 R1 and R2. IRO-005-1 R2 requires monitoring but IRO-010-1 R1 and R2 are data specification requirements for study purposes. ATC believes that the RC should be required to monitor Interchange Transactions.</p> <p>Issue 3: Requirement 14 of IRO-005-1: The SDT has proposed to remove the language that requires the RC to provide the TSP with SOL and IROL limits. We were unable to locate any requirements in IRO-008, 009 and 010 that requires the RC to share SOL and IROL limits with the TSP. It should be the obligation of the RC to provide these limits to the TSP. IRO-002-1 R5 and R6 require the RC to monitor SOLs and FAC-014 R1 requires the RC to ensure that SOLs and IROLs are consistent with its SOL Methodology.</p> <p>Issue 4: ATC does not agree with the changes to TOP-005-1. Although TOP-005 Requirement 1 may be a duplicate of IRO-010, TOP-005 obligates that the RC to identify the data requirements for the "Electric System Reliability Data". TOP-005-1 requirements 2 and 3 still address the "Electric System Reliability Data" section so making it a reference document does not remove it from the mandatory realm. In addition, the RC should be required to sign the "NERC Confidentiality Agreement" identified in TOP-005-1 because the TOP, BA and PSE still have to supply the data specified by the "Electric System Reliability Data" requirements.</p> <p>Issue 5: TOP-006-1 R4: ATC does not agree with the Set's changes to R4 in TOP-006-1. We believe that the RC should be required to purchase their own weather forecasting service. Since most utilities purchase weather forecasting services from third party vendors, which have restrictions about sharing that information, this change would require ATC to purchase and maintain a weather forecasting license for our RC. ATC believes that the above statement is true because the SDT is recommending in its implementation plan that the RC would specify in IRO-010 R1 and R2 the required weather forecasting information. If this is not the case then the SDT should provide information as to why the RC is being removed from Requirement 4 in TOP-006-1.</p>
<p><b>Response:</b></p> <p>Issue 1: The drafting team agrees and will retain Requirement R7. The drafting team working on the set of real-time standards for the Transmission Operator and Balancing Authority will address the retirement of this requirement.</p> <p>Issue 2: The drafting team did not state that IRO-010 R1 and R2 “duplicate” IRO-005 R2. In addition, the data specification in R1 is for all data that the Reliability Coordinator needs for Real-Time Monitoring, Operational Planning Analyses, and Real-time Assessments– and it is not limited to study purposes.</p>		

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Organization/Group		Question 7 Comments:
		<p>Having the Reliability Coordinator monitor the Interchange Transactions would be a modification to the existing R2 and isn't necessary - the e-tag system replaced the need for this requirement. If the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1.</p> <p>Issue 3: The requirement to provide entities with SOLs and IROLs is addressed in FAC-014, Requirement 5.</p> <p>Issue 4: Most entities agreed with having the Reliability Coordinator develop a data specification that includes all data needed to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p> <p>Reference documents do not contain mandatory performance requirements – they may provide information on how to implement a standard, or may explain some aspect of a standard.</p> <p>The drafting team agrees that entities should have to sign the NERC Confidentiality Agreement – but this seems to be a requirement associated with certification rather than in a reliability standard.</p> <p>Issue 5: IRO-010 R1 does not require that the Reliability Coordinator's data specification mandate that entities provide weather forecast data as received from a licensed weather forecasting service.</p> <p>The Reliability Coordinator was removed from TOP-006-2 R4 because the Reliability Coordinator has a requirement to produce a data specification in IRO-010 R1. The SDT is not recommending anywhere that the Reliability Coordinator would specify in IRO-010 R1 and R2 the required weather forecasting information.</p>
Operating Reliability Working Group	No	<p>The retirement of IRO-004-1, R4 and R5 and replacement by IRO-010-1, R1, R2 and R3 seem to be focused on the front-end data sharing requirements.</p> <p>IRO-004-1, R5 specifically addresses sharing the results of the Reliability Coordinator's studies. We can not find a comparable replacement in IRO-010-1, or elsewhere, for this requirement.</p> <p>The SDT should consider moving IRO-005-2, R13 and R14 since these requirements are no longer directed toward the Reliability Coordinator. They don't fit in the IRO standards.</p> <p>We can't seem to find an entry for the retirement of R7 of IRO-004-1.</p> <p>Attachment 1 to TOP-005-2 is shown in the redline version as being deleted apparently due to the proposed retirement of R1. However, Attachment 1 is also referenced in R3 and therefore should not be deleted.</p>
		<p><b>Response:</b> The implementation plan should have recommended retiring IRO-004 R5 because it is replaced with IRO-008 R3 in combination with IRO-010 R3. The team has corrected the implementation plan.</p> <p>In the next round of edits to these standards, we expect that many requirements will be re-sorted so they are in more logical groupings.</p>

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Organization/Group		Question 7 Comments:
		<p>IRO-004-1 R7 - The drafting team agrees that none of the proposed standards addresses this topic and will retain Requirement R7. The drafting team working on the set of real-time standards for the TOP and BA will address the retirement of this requirement.</p> <p>The drafting team returned Attachment 1 to the standard as proposed. It is referenced in R3 as you noted, and will not be deleted by the IROL SDT.</p>
FirstEnergy	Yes	The effective dates correctly follow the end of the implementation schedule for FAC-014.
		<p><b>Response:</b> Thank you for your support.</p>
SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1	Yes	<p>We indicated "Yes" but are really unsure if we are sufficiently aware of what the impacts of the modifications are to system operations. We appreciate the extraordinary amount of effort by individuals involved in developing and revising standards, but we find the implementation plan confusing. This is not the fault of the drafting team, but the fault of the process. There have been innumerable changes to existing standards and to the Functional Model, coupled with FERC requirements to make changes in order to receive their approval. Revisions to standards are being promulgated too rapidly for members to have time to review or keep abreast of proposed changes. The Implementation Plan appears to justify the proposed revisions to, and retirement of, existing standards. we can only trust that the drafting team is using the currently approved version of each identified standard and has stayed abreast of any proposed changes to those standards.</p>
		<p><b>Response:</b> The drafting team is sympathetic – but cannot identify any easy way to manage the number of modifications under development at the same time as we try to comply with the many directives in Order 693 and improve the standards as rapidly as possible. The drafting teams have coordinated their activities to ensure that no critical reliability requirements are dropped, and to ensure that redundant requirements are retired.</p>
Entergy Services	Yes	
RCCWG - reliability coordinator comments working group	Yes	
San Diego Gas and Electric Co.	Yes	
Manitoba Hydro	Yes	



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**8. If you have any other comments on this set of standards that you haven't already provided, please provide them here?**

Organization/Group	Question 8 Comments:
Northeast Utilities	<p>(1) For IRO-009, the VFRs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"):</p> <p>(2) High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.</p> <p>(3) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.</p>
<p><b>Response:</b> The drafting team posted the VFRs for IRO-009 when it posted Draft 7 of the standard (January 2 – February 15, 2007) and asked stakeholders if the VFRs were acceptable. At that time, most commenters – including a commenter from Northeast Utilities, indicated support for the “Medium” VRF for both R1 and R2. Having action plans is important – but failure to have an action plan does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures.</p>	
<p>The intent of the language identifying which entity will serve as the Compliance Enforcement Authority is intended to ensure that no Regional Entity audits an entity that is responsible to that entity. This occurs in WECC, SPP, and FRCC. The language in this section of the standard supports the ERO Rules of Procedure.</p>	
NPCC Regional Standards Committee, RSC	<p>(1) For IRO-009, the VFRs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"):High Risk Requirement A</p>

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	<p>requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.</p> <p>(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.</p>
<p><b>Response:</b> The drafting team posted the VRFs for IRO-009 when it posted Draft 7 of the standard. At that time, most commenters – including commenters from the NPCC CP-9, indicated support for the Medium VRF for R1 and R2. Having action plans is important – but failure to have an action plan does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures.</p> <p>The intent of the language identifying which entity will serve as the Compliance Enforcement Authority is intended to ensure that no Regional Entity audits an entity that is responsible to that entity. This occurs in WECC, SPP, and FRCC. The language in this section of the standard supports the ERO Rules of Procedure.</p>	
<p>Hydro-Quebec TransEnergie</p>	<p>(1) For IRO-009, the VRFs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"): High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.</p> <p>2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up,</p>

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	<p>please revise the language accordingly.</p>
<p><b>Response:</b> The drafting team posted the VRFs for IRO-009 when it posted Draft 7 of the standard. At that time, most commenters – including commenters from the NPCC CP-9 (which included comments from Hydro-Quebec TransEnergie ) and comments submitted solely by Hydro-Quebec TransEnergie, indicated support for the Medium VRF for R1 and R2. Having action plans is important – but failure to have an action plan does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures.</p>	<p>The intent of the language identifying which entity will serve as the Compliance Enforcement Authority is intended to ensure that no Regional Entity audits an entity that is responsible to that entity. This occurs in WECC, SPP, and FRCC. The language in this section of the standard supports the ERO Rules of Procedure.</p>
<p>Ontario IESO</p>	<p>(1) For IRO-009, the VRFs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"): High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.</p> <p>(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.</p> <p>(3) For R2/M2 of IRO-008, it is not possible to keep records of 30 minute IROL analysis for 30 days. Such time-logged analysis which are probably the only evidence of 30 minute analysis and these can only be located on the security analysis software and we do not believe that such software have the capability of keeping such extended records. We believe that the evidence retention for R2/M2 should be a couple of days at the most. In other words, the previous documentation retention requirement for this requirement should be retained.</p>
<p><b>Response:</b> The drafting team posted the VRFs for IRO-009 when it posted Draft 7 of the standard. At that time, most commenters – including commenters from the NPCC CP-9 (which included comments from IESO ) and comments submitted by the IRC Standards Review Committee (which included comments from IESO) indicated support for the Medium VRF for R1 and R2. Comments submitted solely by IESO did recommend that the VRFs for R1 and R2 should both be “high” – but most commenters supported the “Medium” VRFs and the drafting team’s reasoning for recommending the “Medium” VRF - Having action plans is important – but failure to have an action plan does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures.</p>	

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The intent of the language identifying which entity will serve as the Compliance Enforcement Authority is intended to ensure that no Regional Entity audits an entity that is responsible to that entity. This occurs in WECC, SPP, and FRCC. The language in this section of the standard supports the ERO Rules of Procedure.

The evidence required for R2/M2 doesn't have to be the security analysis software – the measure allows for a variety of evidence – one of the types of acceptable evidence is an audit log or a checklist to verify that the analysis was conducted.

<p>ISO RTO Council Standards Review Committee</p>	<p>(1) For IRO-009, the VRFs for R1 and R2 should both be HIGH. The absence of predetermined control actions that need to be made available to operation personnel to prevent and mitigate IROL being exceeded can result in failure to maintain interconnected system reliability. Operating personnel may be faced with having insufficient or no control actions to correct an IROL violation, which can lead to cascade tripping or instability. We believe this comment is consistent with our interpretation of the HIGH risk factor requirement definition (see the text on "planning time frame"): High Risk Requirement A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.</p> <p>(2) We do not understand the distinctions made (under the Compliance Enforcement Authority in the Compliance Monitoring Process of all 3 draft standards) between the RCs that work for the Regional Entity and those that do not. Please provide examples of those RCs that work for an RE. The latter, as a standard developer and compliance monitor per the functional model, does not have any operating and planning tasks assigned to them that require it to employ an RC. However, we do realize that there are REs that are requested by membership in the region through a contractual agreement to perform the RC function for them. In this case, it is the RE that is by contractual arrangement to operate the RC on the membership's behalf, not an employment of an RC by an RE (i.e. an RC working for an RE). If the SDT is referring to this type of set up, please revise the language accordingly.</p>
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**Response:** The drafting team posted the VRFs for IRO-009 when it posted Draft 7 of the standard. At that time, most commenters – including commenters from the IRC Standards Review Committee indicated support for the Medium VRFs for R1 and R2. Having action plans is important – but failure to have an action plan does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures.

The intent of the language identifying which entity will serve as the Compliance Enforcement Authority is intended to ensure that no Regional Entity audits an entity that is responsible to that entity. This occurs in WECC, SPP, and FRCC. The language in this section of the standard supports the ERO Rules of Procedure.

<p>RCCWG - reliability coordinator comments working group</p>	<p>RSAWS need to be developed in parallel with standard revisions to they maintain the intention of the standard for the audit team.</p>
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**Response:** The drafting team's scope does not include development of Reliability Standard Audit Worksheets (RSAWs). The group that develops RSAWs has access to the standard for use in developing RSAWs.

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<p>Manitoba Hydro</p>	<p>There needs to be coordination between IRO-010-1, TOP-005-0 Attachment 1, and VAR-002-1. Is it the intention of IRO-010-1 to ensure the RC has real-time data to monitor the state of the bulk electric system? TOP-005-0 Attachment 1 which is to become a Technical Reference states "1. The following information shall be updated at least every 10 minutes." VAR-002-1 R3 states "Each Generator Operator shall notify its associated Transmission Operator as soon as practical, but within 30 minutes of any of the following:</p> <p style="padding-left: 40px;">R3.1. A status or capability change on any generator Reactive Power resource, including the status of each automatic voltage regulator and power system stabilizer and the expected duration of the change in status or capability.</p> <p style="padding-left: 40px;">R3.2. A status or capability change on any other Reactive Power resources under the Generator Operator's control and the expected duration of the change in status or capability."</p> <p>This does not give the impression that real time status is required. For BES reliability, we ultimately think there should be real-time status from the AVR, PSS or SPS into the entity's Control Centre EMS and simultaneously through an ICCP link to the RC EMS. This approach would be the most robust with the least amount of chance of a communication break down attributed to human error. For an entity with over 100 generators, a project to bring real time AVR, PSS and SPS status into the Control Centre EMS and transfer the data via ICCP to the RC EMS would be very time consuming and costly. We would suggest a period of grace (dependent on number of RTU points required (up to several years)) for entities to reach this goal. During this grace period we suggest that knowledge of AVR, PSS, and SPS status by default is sufficient. In other words the device is considered "in service/on auto" unless the system operator is notified differently. The system operator manually toggles into SCADA the status of the device. The device's status change is communicated to the RC "without delay" either electronically or verbally. The device status in the RC EMS would be updated at this time. Both the entity's and the RC's EMS Real Time Contingency Analyses would be utilizing the latest known AVR, PSS and SPS status. As I see it, this approach, if agreed to by the RC, would satisfy IRO-010-1 R1 - R1.3 and R1 Violation Severity Levels "Lower" through to "Severe".</p>
<p><b>Response:</b> The drafting team is not recommending that VAR-002 R1 should be retired and is no longer recommending the retirement of TOP-005 Attachment 1. VAR-002-1 R3 requires the Generator Operator to provide specific information to the Transmission Operator – not the Reliability Coordinator.</p>	
<p>Operating Reliability Working Group</p>	<p>The Applicability section of IRO-009-1 includes more than a list of entities to which the standard applies. In this situation, a 'what' the standard applies to be included. We've never seen this before and question it's applicability in this case.</p> <p>Add parenthesis around the phrase 'up to and including load shedding' in R1 of IRO-009-1. The same phrase already exists in R2 in parenthesis.</p> <p>In the Compliance Section D, Item 1.4 Data Retention of IRO-010-1 the third paragraph states that the BA, GO, GOP, LSE, RC, TOP and TO shall keep evidence used to show compliance with R3 and M3. How much evidence is required? Prior versions of IRO-010 indicated that 3 months of evidence would be sufficient. Not including a specific reference leaves the</p>

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	<p>standard vague. A specific reference should be included. We suggest returning to the 3 month requirement.</p> <p>Also in this same Item 1.4 the phrase “in advance of real-time” shows up. If it was replaced in IRO-009-1, it should also be replaced here as well.</p>
<p><b>Response:</b> The Applicability Section of the standard may include any information that describes limits on the applicable entities or facilities. The drafting team reviewed the inclusion of the qualifying language and determined that it did not add anything significant to the standard and deleted this.</p> <p>The drafting team adopted your suggestion and added parentheses as proposed to IRO-009 R1.</p> <p>The drafting team added “90 days” as the outside parameter for data retention for R3 M3.</p> <p>The drafting team modified the data retention to include the following phrase, “ in accordance with Requirement R2” in support of the intent of your suggestion.</p>	
<p>SERC OC Standards Review Group - IROL Standards, IRO-008-1, 009-1, 010-1</p>	<p>We feel that the Implementation Plan should not set different implementation dates for jurisdictional and non-jurisdictional entities. This puts an additional burden on Reliability Coordinators to resolve problems involving entities subject to different standards. Our recommendation is that the standard should become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.</p> <p>One concern certain members have involves data retention requirements for IRO-10-1 at R3 and M3 when a system is part of an ISO or RTO and is required by its Reliability Coordinator to input its data into the ISO or RTO business system. For instance, a Reliability Coordinator may require generator operators to periodically update generator operating limits in support of R1-R3 citing two (2) horizons for such entries: (1) the day prior to the operating day and (2) as changes occur in real time. Members agree with the requirements, however data is manually entered into the business system and the member does not have the ability to retain the data or verify that it was entered. Given that the requirements call for the Reliability Coordinator to be provided the data, the measures should require that the RC retain the data provided.</p>
<p><b>Response:</b></p> <p>There are numerous regulatory authorities that need to approve these standards – every Canadian province in Canada – and FERC in the USA. All of the SERC entities are within the USA and are required to comply with standards that are approved by FERC.</p> <p>The compliance program is set up to require the responsible entity to demonstrate that it is compliant. Note that the measure allows the responsible entity great latitude in demonstrating that data was provided. For example, the responsible entity could ask the Reliability Coordinator to provide a letter confirming that it had received the data from the Generator Operator – and the Generator Operator could make this letter available as a method of demonstrating compliance. The measures were changed so that they now say that evidence must be “made available” rather than evidence must “be provided”.</p>	
<p>FirstEnergy</p>	<p>FE has the following additional comments and suggestions:</p> <p>(1) IRO-010 - Requirement R1 - Remove the word “data” between documented and specification to improve clarity and readability.</p>

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	<p>(2) The last sentence of R3 contains a phrase that was previously proposed to be a new term in IRO-007-1, but is now being deleted. If this intended to be retained as a new definitional term within the Glossary it will need to be added to IRO-010.</p> <p>When revised R1.1 and R3 should read as follows:</p> <p>(3) IRO-010 - Presumably the last sentence of R3 is designed to limit the data that the Reliability Coordinator may request from the various responsible entities listed. However, in its current state, the requirement seems to limit what the affected entities can provide. We suggest that it may be clearer to remove the last sentence of R3 and append it to the existing R1.1 requirement. The new R1.1 and R3 are proposed as follows: "R1.1. List of required data and information. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments." "R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified by R1 above, to the Reliability Coordinator(s) with which it has a reliability relationship."</p> <p>(4) With regard to Attachment 1 of TOP-005-2, this information in this attachment is to be transferred to a "Reference" document. However, it is not clear when this reference document is to be developed since a draft of this proposed reference is not available for comment. We suggest this reference document be developed and posted along with these new IROL standards so that it is all completed at the same time. The reference document will be a valuable tool to be used in conjunction with the standards and should be developed in conjunction with these standards.</p> <p>(4) In some of the revised standards, references to previous IROL requirements have been removed as they are now covered in the proposed IRO standards. In some cases, these revisions have led to entire requirements being deleted. It is brought to the attention of the SDT that requirement re-numbering was not correctly shown in the red-line standards provided for review and will need to be corrected in final changes. (e.g. EOP-001, TOP-005, etc.)</p> <p>(6) In IRO-009-1 the Applicability section contains 4.2 stating "The IROLs covered in this standard are limited to those associated with contingencies studied under FAC-011 and FAC-014." The NERC Standard Development Procedure indicates that the Applicability Section is intended to describe the 1) entities responsible for complying with the standard and 2) if needed, the portion of the bulk power system for which the standard is applicable. The 4.2 item may introduce an unintended use of the Applicability section and it may be better to move this item to a new requirement R1 in the standard worded as follows: "R1 Each Reliability Coordinator shall manage its current day system against IROL conditions identified in a manner consistent with the requirements of standards FAC-011 and FAC-014."</p>
<p><b>Response:</b>  <b>1</b> – The drafting team  <b>2</b> – The drafting team  <b>3</b> – IRO-010 R1.1 and R3  <b>4</b> – The IROL drafting</p>	<p>removed the extra word, "data" from IRO-010 - Requirement R1 as proposed.</p> <p>changed the phrase in IRO-010 R1 so that the word, "Monitoring" is no longer capitalized. Note that "Real-time" is a defined term and the drafting team retained the capitalization of this term.</p> <p>The drafting team moved the sentence from R3 to R1.1 as suggested.</p> <p>has removed its recommendation to retire Attachment 1 in TOP-005-2 because the attachment is referenced in Requirement 3 in TOP-005-2 which is not being retired by the IROL drafting team. There is another team that is recommending that TOP-005-2 R3 be retired or revised and that drafting team may recommend retirement of Attachment 1.</p>

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<p>5 – Red line renumbering - Agree – red line numbering doesn't always work because of the auto features in Word.          6 - The drafting team removed 4.2 from the revised standard.</p>	
Hydro One Networks	<p>We believe a SAR should be initiated to "clean-up" standards &amp; requirements that may be redundant or incorrect as opposed to retiring them within an implementation plan which pertains to a different set of standards.</p> <p>As well, for IRO-009, the VRFs for R1 and R2 should both be High.</p>
<p><b>Response:</b> For standards that were initiated prior to Version 0, the Standards Committee has authorized drafting teams to recommend the modification/retirement of requirements in Version 0 standards that are replaced/modified by an associated Version 1 requirement. The reason for this authorization is because the Version 1 drafting teams initiated their SARs before the Version 0 effort was started. Note that the recommended modifications are limited to those associated with requirements that are being replaced or revised as a result of the three remaining new IROL standards. The ballot for the IROL standards will include the recommended retirements and revisions. The IROL SDT limited its recommendations for retirements and revisions to those requirements that were technically incorrect based on the proposed IROL standards or were redundant with requirements in the proposed IROL standards.</p> <p>The drafting team posted the VRFs for IRO-009 when it posted Draft 7 of the standard (January 2 – February 15, 2007) and asked stakeholders if the VRFs were acceptable. At that time, most commenters including a commenter from Hydro One Networks who submitted comments as part of the NPCC CP9 Reliability Standards Working Group indicated support for the "Medium" VRF for both R1 and R2. Having action plans is important – but failure to have an action plan does not, in and of itself, cause bulk power system instability, separation, or a cascading sequence of failures.</p>	
American Transmission Company LLC	<p>Operational Planning Analysis (Definition): The phrase "next day's operation and up to 12 months ahead" (See definition of Operational Planning Analysis) is too broad when used in the context of requirement 1. The definition should be broken into two independent definitions one to address the "next day study" and a second to address the "up to 12 months study". Requirement 1 states that the RC has to perform an Operational Planning Analysis which, we have identified above, means "next day and up to 12 months" for the next operating day. By including the "up to 12 months" in the definition we believe that for every next day study the RC has to perform two independent studies. 1) One for the next day and 2) One for some other day that is up to 12 months It is for this reason that we suggest that the definition be broken into two distinct terms.</p> <p>IRO-008-1: ATC believe that IRO-008-1 R1 and R2 should be expanded to include SOLs in the Operational Planning Analysis and Real-Time Assessment.</p> <p>IRO-009-1The applicability section of that standard is to be used to identify the functional entity that must comply with the standard. The SDT is using this section to place an exception on the requirements. Any exception should be identified in the requirements. (Solution could be with a footnote)</p> <p>Standard IRO-009-1 needs two additional requirements: 1) Require the RC has to coordinate their plans with entities that are expected to perform an action in the plan. 2) Distribute and share those plans with entities that are expected to perform an action. R3 ATC is concern that compliance is based on following the plan and what is more important is if the RC prevented the IROL from exceeding the Tv. The requirement should specify that the RC prevents the IROL not that they follow their plan.</p> <p>IRO-010-1 Data Retention rule A more specific data retention period should be established. The current language would</p>



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	<p>require ATC to keep data anywhere from one month to seven years or more. “For data that is requested in advance of real-time the TOP shall keep evidence used to show compliance with R3 for the RC’s most recent data specifications.” (If the RC updated their data specifications once every seven years all entities must retain their data for seven years.) General Comment: ATC suggest that this SDT work closely with the Reliability Coordinator SDT in order to ensure a comprehensive set of standards.</p>
<p><b>Response:</b></p>	<p>Definition of Operational Planning Analysis - The drafting team modified the definition to clarify that there needs to be an analysis for each day, but the analysis does not need to be done once a day – and the analysis does not have to look at every day from the next day up to a year ahead.</p> <p>Expansion of IRO-008-1 R1 and R2 to include SOLs - The drafting team did not adopt this suggestion. The Reliability Coordinator may not have the ability to see all SOLs. This set of standards has focused on those SOLs that have greatest impact on the bulk electric system – the IROLs. The RTO SDT is working on specific requirements related to SOLs that are not IROLs.</p> <p>IRO-009-1 Applicability Section - The drafting team removed 4.2 from the Applicability Section of the standard because it duplicates information already included in the requirements. Note that the applicability section of the standard can also be used to identify other limitations on the applicability of the standard – such as limiting applicability to a specific type of facility or to a specific geographic location, etc.</p> <p>Standard IRO-009-1 – proposal to add requirements for the Reliability Coordinator to “coordinate” and “distribute” its plans - The drafting team did not adopt this suggestion. Under IRO-008, the Reliability Coordinator has to share the results of its analyses and assessments if they indicate the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL. IRO-009 requires the Reliability Coordinator to direct entities to follow specific action plans to prevent/mitigate instances of exceeding IROLs. The Reliability Coordinator is responsible for acting or directing others to act – the word, “coordination” doesn’t convey the same meaning.</p> <p>The drafting team added a phrase to R3 to clarify that the Operating Processes, Procedures and Plans used to prevent exceeding an IROL are not limited to those identified in R1 but did not modify the requirement to change the emphasis- the drafting team thinks that it will not always be possible to prevent exceeding an IROL.</p> <p>IRO-010-1 Data Retention - The drafting team added “for a rolling 90 days” to the data retention requirement for R3.</p> <p>The drafting team is working closely with the Reliability Coordination SDT to ensure coordination.</p>

**Observations and Discussions with FERC Staff May 29, 2008 and June 3, 2008**

The following notes were developed from a combination of two conference calls conducted on May 29, 2008 and on June 3, 2008 with members of FERC Staff, members of the IROL Standard Drafting Team, and members of NERC's staff. There were no formal agendas for the meetings, but the purpose was to review the FERC directives from Order 693 applicable to the IROL Standards and identify any areas where FERC staff had concerns about meeting the directives.

**The following people were in attendance during the call on May 29, 2008:**

IROL Standard Drafting Team:

- Ellis Rankin, chair
- Jim Case
- Al DiCaprio
- Mike Hardy
- Steve Myers

FERC Staff:

- Keith O'Neal
- Bob Snow

NERC Staff:

- Gerry Adamski
- Maureen Long
- David Taylor

**The following people were in attendance during the call on June 3, 2008:**

IROL Standard Drafting Team:

- Ellis Rankin, chair
- Jim Case
- Al DiCaprio
- Mike Hardy
- Tony Jankowski
- Seamus McGovern
- Al Miller
- Jamie Murphy
- Steve Myers

FERC Staff:

- Bob Snow

NERC Staff:

- Maureen Long

**There were nine issues discussed during the two conference calls:**

Issue 1 – Vetting a drafting team’s products against FERC directives

Issue 2 - Reliability-related impact of removing “monitoring SOL” requirements

Issue 3 - Acceptable uses of firm load shedding

Issue 4 – Intent of IRO-010 – R1

Issue 5 - Reliability-related impact of removing Attachment 1 from TOP-005

Issue 6 - Advance notice of planned outages

Issue 7 – Reliability Coordinator tools

Issue 8 - Providing operators with action plans for n-1-1 conditions

Issue 9 – Reliability-related impact of retiring EOP-001 R2

### Issue 1 – Vetting a drafting team’s products against FERC directives

**FERC:** What is NERC process for vetting SDT products against applicable FERC Order Directives and how is the result documented or indicated in public NERC postings?

**Discussion:** The IROL SDT has not posted its SDT products against the FERC directives, but did conduct a review amongst the SDT members to verify that their work would meet the directives. Does the SDT want to post a table showing the directives & how it met the directives when its posts its work for pre-ballot review?

**SDT Resolution:** This document is not needed. When the IROL documents are submitted to the Standards Committee for approval to move forward, the Standards Committee should be asked if it wants a list of the FERC directives and the team’s consideration of those directives posted for review.

### Issue 2 - Reliability-related impact of removing “monitoring SOL” requirements

**FERC:** SOLs have been removed – focus is on IROLs only – what happened to SOLs?

Make sure the filing identifies what happened to activities that were there before – where are they now, identify where they went – need to show that the ‘check and balance’ is still there. Identify how the requirements address the time spectrum.

**Discussion:** How should SDT indicate that SOLs are still to be monitored etc with an appropriate ‘oversight’ role for RC and what timing implications need to be addressed between IROL standard effective date vs other still pending standards? IE FERC's concern that revised or new standards coordinate etc with current FERC approved standards and do not lead to less reliable BES.

Note - FERC staff looked at the latest posted version of the Implementation Plan – which still recommended retirement of requirements for the RC to “monitor”. Because we decided not to include any new requirements for monitoring, our latest version of the implementation plan does not include recommendations to retire the monitoring requirements.

**SDT Resolution:** No adjustments are needed to the standards or to the implementation plan. Use the advice when filing the standards for approval with regulatory authorities.

### Issue 3 - Acceptable uses of firm load shedding

**FERC:** Look at the transmission themes section of Order 693 – expectation is that load can be served when there are no contingencies on the system –

If you have a single contingency (whatever equipment taken out of service – the protective zone of the fault is a single contingency) there can be some consequential load loss

**Discussion:** Clarify the use of Firm Load Shed action as part of any operating time frame emergency plan (and not as a substitute for utilization of all physical resources available within the time frame).

**SDT Resolution:** No adjustments are needed to the standards or to the implementation plan. Document the team’s approach when filing the standards for approval with regulatory authorities.

**Issue 4 – Intent of IRO-010 – R1**

**FERC:** IRO-010 – Requirement R1 - Consider moving the purpose statement into the requirement

**Discussion:** The drafting team agreed that the proposed modification would clarify the intent of R1.

**SDT Resolution:** Modify IRO-010 R1 to add key words from the purpose to the requirement to clarify the intent of the requirement.

**Issue 5 - Reliability-related impact of removing Attachment 1 from TOP-005**

**FERC:** The Implementation plan states that the list of data will be moved into a tech reference – but there is no tech reference posted . . .

What is the advantage of moving the attachment into a reference – does this result in a better standard than you would achieve if the attachment were a set of “minimums” that must be met?

**Discussion:** We need some key words we can use when we file this standard for regulatory approval to show that we haven’t degraded reliability by requiring the Reliability Coordinator to have a data specification. The team felt that having a set of minimum elements to address would allow some entities to default into a position of thinking that these are the only elements that need to be addressed – and felt that forcing the Reliability Coordinator to document what it needs would result in a better product.

**SDT Resolution:** One of the stakeholder comments submitted during the public posting period identified that the attachment is referenced in TOP-005 Requirement R3 (that requirement is not being retired by the IROL SDT) and the attachment needs to be retained. The drafting team modified its Implementation Plan so that it no longer recommends retirement of Attachment 1 in TOP-005.

**Issue 6 - Advance notice of planned outages**

**FERC:** Consideration of Order 693 Paragraph 1621 regarding planned outage lead times isn’t reflected in the implementation plan’s recommendation to revise TOP-003 R1

The change proposed for TOP-003 R1 is:

**R1.** Generator Operators and Transmission Operators shall provide planned outage information.

**R1.1** Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.

**R1.2** Each Transmission Operator shall provide outage information daily to ~~its Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~

Directives in Order 693 relative to TOP-003:

1. Include a new requirement to communicate longer term outages well in advance to ensure reliability and accuracy of ATC calculation
2. Make any facility below the voltage thresholds that, in the opinion of the transmission operator, balancing authority, or reliability coordinator, will have a direct impact on the operation of Bulk-Power System, subject to Requirement R1 for planned outage coordination
3. Incorporate an appropriate lead time for planned outages as discussed above.

Some of the discussion in Order 693 for TOP-003:

1620. In Order No. 890, the Commission directed that information concerning ATC calculations be consistent and transparent. The timing of facility outages is one important piece of information in ATC calculations. In Order No. 890, the Commission directed that specific data be exchanged among transmission providers, including transmission planned and contingency outages, for the purpose of ATC modeling.

Consistent with this determination in Order No. 890, [the Commission directs the ERO to develop a modification to TOP-003-0 that requires the communication of scheduled outages to all affected entities well in advance to ensure reliability and accuracy of ATC calculations.](#) We believe this addresses LPPC's concern regarding the interplay between reliability and business practices.

1621. Several commenters raised concerns regarding the Commission's proposal to require outage information well in advance. Specifically, they argue that the term "well in advance" is vague, that the requirement would reduce flexibility and that it would cause entities to postpone needed maintenance work, thereby reducing reliability. In response to the Commission's request for comments on lead time for planned outages, entities provide information on current lead time practices indicating that lead times range from one week to 45 days. We direct the ERO to modify the Reliability Standard to incorporate an appropriate lead time for planned outages. The ERO should utilize the information filed by commenters in the Reliability Standards development process. In doing so the ERO should take into consideration the need for flexibility, as well the lead time required for coordination with other entities and outage assessments. Proper coordination will ensure that priority is given to needed maintenance work for critical facilities to ensure reliability.

**Discussion:** There are three FERC directives, the first one applies to the ATC standards – and seems to be addressed in the proposed ATC standards in the requirements for calculating TTC, ATC, and AFC. The second directive should be addressed by the Real-time BA/TOP SDT and the third directive should be addressed in our data spec requirement. Should we consider adding some language to the tech reference to indicate that the RC should request that the TOP/GO/GOP provide outage data as soon as it is known so the RC can incorporate this data in its Operational Planning Analyses?

R3. When calculating TTCs for ATC Paths, the Transmission Operator shall include the following data for the Transmission Service Provider's area. The Transmission Operator shall also include the following data associated with Facilities that are explicitly represented in the Transmission model, as provided by adjacent Transmission Service Providers and any other Transmission Service Providers with which coordination agreements have been executed: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning]

R3.1. For on-peak and off-peak intra-day and next-day TTCs, use the following (as well as any other values and additional parameters as specified in the ATCID):

R3.1.1. Expected generation and Transmission outages, additions, and retirements, included as specified in the ATCID.

R3.1.2. Load forecast for the applicable period being calculated.

R3.1.3. Unit commitment and dispatch order, to include all designated network resources and other resources that are committed or have the legal obligation to run, (within or out of economic dispatch) as they are expected to run.

R3.2. For days two through 31 TTCs and for months two through 13 TTCs, use the following (as well as any other values and internal parameters as specified in the ATCID):

R3.2.1. Expected generation and Transmission outages, additions, and Retirements, included as specified in the ATCID.

R3.2.2. Daily load forecast for the days two through 31 TTCs being calculated and monthly forecast for months two through 13 months TTCs being calculated.

R3.2.3. Unit commitment and dispatch order, to include all designated network resources and other resources that are committed or have the legal obligation to run, (within or out of economic dispatch) as they are expected to run.

The latest draft of MOD-030 includes the following:

R5. When calculating AFCs, the Transmission Service Provider shall: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning]

R5.1. Use the models provided by the Transmission Operator.

R5.2. Include in the transmission model expected generation and Transmission outages, additions, and retirements within the scope of the model as specified in the ATCID and in effect during the period calculated for the Transmission Service Provider's area, all adjacent Transmission Service Providers, and any Transmission Service Providers with which coordination agreements have been executed.

R5.3. For external Flowgates, identified in R2.1.3, use the AFC provided by the Transmission Service Provider that calculates AFC for that Flowgate.

Note that the third standard for calculating ATC, MOD-029 doesn't have references to outages.

**SDT Resolution:** No adjustments are needed to the standards or to the implementation plan.

NERC staff will ask the Certification Subcommittee to add the following to the certification process:

- Require the prospective Reliability Coordinator to have a procedure for coordination of planned generation and transmission outages that includes the following:
  - Identification of a lead time for planned outages that provides sufficient time for reliability-related coordination
  - Identification of the criteria used to determine which outages to approve when there are multiple requests for outages and they can't all be approved

### Issue 7 – Reliability Coordinator tools

**FERC:** If the drafting team is expecting that Order 693 Paragraph 1660 regarding minimum tools for the Reliability Coordinator will be addressed through the certification process, the filing for the standard should indicate that the alternate is providing an “equally effective and efficient” method of meeting this directive.

**Discussion:** Should the IROL standards (or any other standard) specify any minimum tool requirements? The SDT wrote the standards with the expectation that facility requirements would be addressed in certification.

FERC staff looked at the latest posted version of the Implementation Plan – which still recommended retirement of requirements for the RC to “monitor”. Because we decided not to include any new requirements for monitoring, our latest version of the implementation plan does not include recommendations to retire the monitoring requirements.

**SDT Resolution:** No adjustments are needed to the standards or to the implementation plan. The drafting team’s set of standards do not include any for “monitoring” – and the implementation plan does not recommend retirement of any “monitoring” requirements.

### Issue 8 - Providing operators with action plans for n-1-1 conditions

**FERC:** Review paragraph 1601 in the Order – this suggests that if the next evil thing occurs before the system is returned to a stable state, then there should be a pre-defined plan in place for the system operator to use. This should include a plan for every possible second contingency and should include control actions.

1601. . . Therefore, we direct the ERO to modify Reliability Standard TOP-002-2 to require the next-day analysis for all IROLs to identify and communicate control actions to system operators that can be implemented within 30 minutes following a contingency to return the system to a reliable operating state and prevent cascading outages.

**Clarification:** FERC staff advised that this paragraph requires that the system operator be provided with action plans to use to prepare for the next contingency during the adjustment time period when an IROL has been exceeded but the system hasn’t been returned to a “stable” or “normal” state.

**Discussion:** None of the drafting team members participating in the call agreed with this interpretation of Paragraph 1601.

**SDT Resolution:** No adjustments are needed to the standards or to the implementation plan. Document the team’s understanding of 1601 when filing the standards for approval with regulatory authorities.



**Issue 9 – Reliability-related impact of retiring EOP-001 R2**

**FERC:** The drafting team needs to verify that when EOP-001 R2 is retired, there is still a requirement for the TOP to have load reduction plans that can be executed within a specific time frame – otherwise, the drafting team should consider whether the retirement of EOP-001 R2 could result in less reliability.

**Discussion:** The drafting team is recommending that EOP-001 R2 be retired when IRO-009-1 R1 and R2 become effective. The RC, not the TOP is responsible for developing plans to prevent and mitigate instances of exceeding identified IROLs. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL’s  $T_v$ , which can be shorter than 30 minutes.

**EOP-001 R2.** The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.

**SDT Resolution:** EOP-001 R3 and R4 require the TOP to have load reduction plans that can be executed within a specific timeframe – so the recommended retirement will not adversely impact reliability, and no change was made to the implementation plan.

**EOP-001**

**R3.** Each Transmission Operator and Balancing Authority shall:

**R3.1.** Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.

**R3.2.** Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.

**R3.3.** Develop, maintain, and implement a set of plans for load shedding.

**R3.4.** Develop, maintain, and implement a set of plans for system restoration.

**R4.** Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:

**R4.1.** Communications protocols to be used during emergencies.

**R4.2.** A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

### A. Introduction

1. **Title:** **Emergency Operations Planning**
2. **Number:** EOP-001-1
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Dates:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

### B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- R2. Each Transmission Operator and Balancing Authority shall:
  - R2.1. Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - R2.2. Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - R2.3. Develop, maintain, and implement a set of plans for load shedding.
  - R2.4. Develop, maintain, and implement a set of plans for system restoration.
- R3. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R3.1. Communications protocols to be used during emergencies.
  - R3.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.
  - R3.3. The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.
  - R3.4. Staffing levels for the emergency.
- R4. Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

- R5.** The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.
- R6.** The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:
  - R6.1.** The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.
  - R6.2.** The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.
  - R6.3.** The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
  - R6.4.** The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

**C. Measures**

- M1.** The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2.** The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

**1.2. Compliance Monitoring Period and Reset Time Frame**

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

**1.3. Data Retention**

Current plan available at all times.

**1.4. Additional Compliance Information**

Not specified.

## Standard EOP-001-1 — Emergency Operations Planning

### 2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs. Or 25 to 50% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs. Or 50% to 75% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs. Or more than 75% of those agreements do not contain provisions for emergency assistance.
R2	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with four (4) of the sub-components.
R2.1	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.
R2.2	The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not maintained.	The Transmission Operator or Balancing Authority's transmission system emergency plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for emergencies on the transmission system.

**Standard EOP-001-1 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R2.3	The Transmission Operator or Balancing Authority's load shedding plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.	The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.
R2.4	The Transmission Operator or Balancing Authority's system restoration plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's system restoration plans are partially compliant with the requirement but are not maintained.	The Transmission Operator or Balancing Authority's restoration plans are neither maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for system restoration.
R3	The Transmission Operator or Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.
R3.1	The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.
R3.2	The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.	N/A	The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.	The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.

**Standard EOP-001-1 — Emergency Operations Planning**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R3.3	The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.
R3.4	The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency	N/A	N/A	N/A
R4	The Transmission Operator and Balancing Authority's emergency plan has complied with 90% or more of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 70% to 90% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with between 50% to 70% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 50% or less of the number of sub-components
R5	The Transmission Operator and Balancing Authority is missing minor program/procedural elements.	The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans	The Transmission Operator and Balancing Authority has failed to annually review two of its emergency plans or communicate with one of it's neighboring Balancing Authorities.	The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with its Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.
R6	The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the sub-components.	The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.

**Standard EOP-001-1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
R6.1	The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.	N/A	N/A	N/A
R6.2	The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.	N/A	N/A	N/A
R6.3	The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.	N/A	N/A	N/A
R6.4	The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.	N/A	N/A	N/A

**E. Regional Differences**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Deleted R2 Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels Corrected typographical errors in BOT approved version of VSLs	Revised



**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system's own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

**A. Introduction**

1. **Title:** **Reliability Coordination — Facilities**
2. **Number:** IRO 002-2
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

**B. Requirements**

- R1.** Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.
- R2.** Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.
- R3.** Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.
- R4.** Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.
- R5.** Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.
- R6.** Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.

- R7.** Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.
- R8.** Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

**C. Measures**

- M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 3.
- M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 3.
- M3.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.
- M4.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 6.
- M5.** Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 7)
- M6.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 8 Part 1.
- M7.** Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 8 Part 2.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

**1.3. Data Retention**

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1 through 7.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

None.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator has demonstrated communication facilities for both voice and data exist to all appropriate entities and that they are staffed and available but they are less than adequate.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with one appropriate entity or 2) Data links with one appropriate entity.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with two appropriate entities or 2) Data links with two appropriate entities.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with more than two appropriate entities or 2) Data links with more than two appropriate entities or 3) Communication facilities are not staffed or 4) Communication facilities are not ready.
R2	N/A	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with one of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with two of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with three of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.
R3	N/A	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to one of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to two or more of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to all of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with all neighboring Reliability Coordinators.

**Standard IRO-002-2 — Reliability Coordination — Facilities**

Requirement	Lower	Moderate	High	Severe
R4	The Reliability Coordinator's monitoring systems provide information in a way that is not easily understood and interpreted by the Reliability Coordinator's operating personnel or particular emphasis was not given to alarm management and awareness systems, automated data transfers and synchronized information systems.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that one potential or actual SOL or IROL violation is not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that two or more potential and actual SOL and IROL violations are not identified.	The Reliability Coordinator has failed to demonstrate that is has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that all potential and actual SOL and IROL violations are identified.
R5	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in one SOL violations or 2) or operating reserves for a small portion of the Reliability Authority Area.	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or to system restoration, 2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations, or 3) operating reserves.	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing two or more IROLs; or one IROL and to system restoration, 2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations and operating reserves, or 3) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or system restoration and operating reserves.	The Reliability Coordinator failed to monitor: 1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all IROLs and to system restoration, or 2) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all SOL violations and operating reserves.

Standard IRO-002-2 — Reliability Coordination — Facilities

Requirement	Lower	Moderate	High	Severe
R6	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing all pre-contingency flows,</li> <li>2) analysis tools capable of assessing all post-contingency flows, or</li> <li>3) all necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing the majority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing the majority of post-contingency flows, or</li> <li>3) the majority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing a minority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing a minority of post-contingency flows, or</li> <li>3) a minority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing any pre-contingency flows,</li> <li>2) analysis tools capable of assessing any post-contingency flows, or</li> <li>3) any necessary wide-area overview displays exist.</li> </ol>
R7	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored SOLs when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor SOLs when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored one IROL when the main monitoring system was unavailable or</li> <li>2) it has provisions to monitor one IROL when the main monitoring system is not available.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that:</p> <ol style="list-style-type: none"> <li>1) it or a delegated entity monitored two or more IROLs when the main monitoring system was unavailable,</li> <li>2) it or a delegated entity monitored SOLs and one IROL when the main monitoring system was unavailable</li> <li>3) it has provisions to monitor two or more IROLs when the main monitoring system is not available, or</li> <li>4) it has provisions to monitor SOLs and one IROL when the main monitoring system was unavailable.</li> </ol>	<p><b>R9.</b> The Reliability Coordinator failed to demonstrate that it continuously monitored its Reliability Authority Area.</p>

**Standard IRO-002-2 — Reliability Coordination — Facilities**

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Requirement	Lower	Moderate	High	Severe
R8	Reliability Coordinator has approval rights for planned maintenance outages of analysis tools but does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.	Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools.	Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools and does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.	Reliability Coordinator approval is not required for planned maintenance.



**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Deleted R2, M3 and associated compliance elements Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs) Corrected typographical errors in BOT approved version of VSLs	Revised

**A. Introduction**

1. **Title:** **Reliability Coordination — Operations Planning**
2. **Number:** IRO-004-2
3. **Purpose:** Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
  - 4.3. Transmission Service Providers.
5. **Effective Date:** In those jurisdictions where no regulatory approval is required, the standard shall be retired on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall be retired effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

**B. Requirements**

- R1. Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.

**C. Measures**

- M1. None

**D. Compliance**

**1. Compliance Monitoring Process**

Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on site audit, Reliability Coordinators will be asked to provide documentation showing that next-day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits, etc.

- 1.1. **Compliance Monitoring Responsibility**
- 1.2. **Compliance Monitoring Period and Reset Time Frame**
- 1.3. **Data Retention**
- 1.4. **Additional Compliance Information**

**2. Violation Severity Levels**

Requirement	Lower	Moderate	High	Severe
R1	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on one (1) occasion during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on two (2) to three (3) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on four (4) to five (5) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on more than five (5) occasions during a calendar month.

**E. Regional Variances**

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels Retired R1 through R6, and associated Measures, Data Retention, and VSLs	Revision

## A. Introduction

1. **Title:** **Reliability Coordination — Current Day Operations**
2. **Number:** IRO-005-3
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.

5. **Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:
  - R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.
  - R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.4. System real and reactive reserves (actual versus required).
  - R1.5. Capacity and energy adequacy conditions.
  - R1.6. Current ACE for all its Balancing Authorities.

- R1.7.** Current local or Transmission Loading Relief procedures in effect.
- R1.8.** Planned generation dispatches.
- R1.9.** Planned transmission or generation outages.
- R1.10.** Contingency events.
- R2.** Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.
- R3.** Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.
- R4.** The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.
- R5.** Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.
- R6.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.
- R7.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.
- R8.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.
- R9.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.
- R10.** In instances where there is a difference in derived limits, the Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
- R11.** The Transmission Service Provider shall respect SOLs and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.

- R12.** Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.

**C. Measures**

- M1.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.
- M2.** If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2 and Requirement 10)
- M3.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 6)
- M4.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement 7.
- M5.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 8 Part 1.
- M6.** The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 8 Part 2)
- M7.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or

DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1)

- M8.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 11 Part 1)
- M9.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 12)
- M10.** If there is an instance where there is a disagreement on a derived limit, the Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (Part 2 of Requirement 13)
- M11.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.(Requirement 14 Part 2)
- M12.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 15 Part 1.
- M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 15 Part 2.
- M14.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated. (Requirement 15 Part 3)

## **D. Compliance**



**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

**1.3. Data Retention**

For Measures 1 and 9, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures 2–8 and Measures 12 through 13, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure 6, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure 10, the Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure 11, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

None.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator failed to monitor one (1) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor two (2) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor more than three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.
R1.1	The Reliability Coordinator failed to monitor the current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.	N/A	N/A	N/A
R1.2	The Reliability Coordinator failed to monitor current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.3	The Reliability Coordinator failed to monitor current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A
R1.4	The Reliability Coordinator failed to monitor system real and reactive reserves (actual versus required).	N/A	N/A	N/A
R1.5	The Reliability Coordinator failed to monitor capacity and energy adequacy conditions.	N/A	N/A	N/A
R1.6	The Reliability Coordinator failed to monitor current ACE for all its Balancing Authorities.	N/A	N/A	N/A
R1.7	The Reliability Coordinator failed to monitor current local or Transmission Loading Relief procedures in effect.	N/A	N/A	N/A
R1.8	The Reliability Coordinator failed to monitor planned generation dispatches.	N/A	N/A	N/A
R1.9	The Reliability Coordinator failed to monitor planned transmission or generation outages.	N/A	N/A	N/A

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.10	The Reliability Coordinator failed to monitor contingency events.	N/A	N/A	N/A
R2	N/A	The Reliability Coordinator failed to direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities.	The Reliability Coordinator failed to issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	The Reliability Coordinator failed to monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves was provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.
R3	N/A	N/A	The Reliability Coordinator ensured its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information, but failed to assist, when needed, in the development of any required response plans.	The Reliability Coordinator failed to ensure its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information.
R4	N/A	N/A	N/A	The Reliability Coordinator failed to disseminate information within its Reliability Coordinator Area, when required.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R5	N/A	N/A	The Reliability Coordinator monitored system frequency and its Balancing Authorities' performance but failed to direct any necessary rebalancing to return to CPS and DCS compliance.	The Reliability Coordinator failed to monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance or the responsible entity failed to utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R6	N/A	<p>The Reliability Coordinator coordinated with Transmission Operators, Balancing Authorities, and Generator Operators, as needed, to develop action plans to mitigate potential or actual SOL, CPS, or DCS violations but failed to implement said plans, or the Reliability Coordinator coordinated pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in the real-time reliability analysis timeframe but failed to coordinate pending generation and transmission maintenance outages in the next-day reliability analysis timeframe.</p>	<p>The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations, or the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.</p>	<p>The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations and the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.</p>
R7	N/A	N/A	N/A	<p>The Reliability Coordinator failed to assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities, when necessary.</p>

**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R8	N/A	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange and discussed corrective actions with the appropriate Balancing Authority but failed to direct the Balancing Authority to comply with CPS and DCS.	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange but failed to discuss corrective actions with the appropriate Balancing Authority.	The Reliability Coordinator failed to identify sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange.
R9	N/A	N/A	N/A	The Reliability Coordinator failed to be aware of the impact on inter-area flows of an inter-Balancing Authority or inter-Transmission Operator, following the operation of a Special Protection System that is armed (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation), or the Transmission Operator failed to immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.



**Standard IRO-005-3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R10	N/A	N/A	N/A	The responsible entity failed to operate the Bulk Electric System to the most limiting parameter in instances where there was a difference in derived limits.
R11	N/A	N/A	N/A	The Transmission Service Provider failed to respect SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
R12	N/A	The Reliability Coordinator failed to notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.	N/A	The Reliability Coordinator who foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area failed to issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area, or the receiving Reliability Coordinator failed to disseminate this information to its impacted Transmission Operators and Balancing Authorities.

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Retired R2, R3, R5; modified R9, R13 and R14; retired R16 and R17 Retired M2 and M3; modified M9 and M12; retired M13 Made conforming changes to data retention Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs) Retired VSLs associated with R2, R3, R5, R16 and R17; Modified VSLs associated with R9 and R13, and R14	Revised

## A. Introduction

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-1
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.

- R3.** Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4.** Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

**C. Measures**

- M1.** Evidence that the Generator Operator, Transmission Operator, and Balancing Authority reported and coordinated scheduled outage information as indicated in the requirements above.

**D. Compliance**

**1. Compliance Monitoring Process**

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

**1.1. Compliance Monitoring Responsibility**

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

**1.2. Compliance Monitoring Period and Reset Timeframe**

One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

One calendar year.

**1.4. Additional Compliance Information**

Not specified.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Generator Operator failed to provide outage information, in accordance with its Transmission Operators established outage reporting requirements, to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW).
R1.1	N/A	N/A	N/A	The Transmission Operator failed to provide outage information, in accordance with its Reliability Coordinators established outage reporting requirement, to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.

**Standard-TOP-003-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R1.2	The responsible entity failed to provide the information by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.	N/A	N/A	N/A
R1.3	N/A	N/A	N/A	The responsible entity failed to plan or coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators when required.
R2	The responsible entity planned and coordinated scheduled outages of telemetering and control equipment and associated communication channels with its Reliability Coordinator, but failed to coordinate with affected neighboring Transmission Operators, Balancing Authorities, and Generator Operators.	N/A	N/A	The responsible entity failed to plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.

**Standard-TOP-003-1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R3	N/A	N/A	N/A	The Reliability Coordinator failed to resolve any scheduling of potential reliability conflicts.
R4	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 30 minutes but less than or equal to 35 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 35 minutes but less than or equal to 40 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 40 minutes but less than or equal to 45 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 45 minutes.

**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Modified R1.2 Modified M1 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised



## A. Introduction

1. **Title:** **Operational Reliability Information**
2. **Number:** TOP-005-2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Purchasing Selling Entities.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”
- R2. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.
- R3. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

## C. Measures

- M1. Evidence that the Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

## D. Compliance

1. **Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

**1.2. Compliance Monitoring Period and Reset Time Frame**

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

**1.3. Data Retention**

Not specified.

**1.4. Additional Compliance Information**

Not specified.

**2. Violation Severity Levels:**

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The ISN data recipient failed to sign the NERC Confidentiality Agreement for “Electric System Reliability Data”.
R2	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.
R3	The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.	N/A	N/A	The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.

**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1		Removed the Reliability Coordinator from the list of responsible functional entities Deleted R1 and R1.1 Modified M1 to omit the reference to the Reliability Coordinator Deleted VSLs for R1 and R1.1	Revised

## Attachment 1-TOP-005

### Electric System Reliability Data

This Attachment lists the types of data that Balancing Authorities, and Transmission Operators are expected to share with other Balancing Authorities and Transmission Operators.

1. The following information shall be updated at least every ten minutes:
  - 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:
    - 1.1.1 Status.
    - 1.1.2 MW or ampere loadings.
    - 1.1.3 MVA capability.
    - 1.1.4 Transformer tap and phase angle settings.
    - 1.1.5 Key voltages.
  - 1.2. Generator data.
    - 1.2.1 Status.
    - 1.2.2 MW and MVAR capability.
    - 1.2.3 MW and MVAR net output.
    - 1.2.4 Status of automatic voltage control facilities.
  - 1.3. Operating reserve.
    - 1.3.1 MW reserve available within ten minutes.
  - 1.4. Balancing Authority demand.
    - 1.4.1 Instantaneous.
  - 1.5. Interchange.
    - 1.5.1 Instantaneous actual interchange with each Balancing Authority.
    - 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.
    - 1.5.3 Interchange Schedules for the next 24 hours.
  - 1.6. Area Control Error and frequency.
    - 1.6.1 Instantaneous area control error.
    - 1.6.2 Clock hour area control error.
    - 1.6.3 System frequency at one or more locations in the Balancing Authority.
2. Other operating information updated as soon as available.
  - 2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.

- 2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.
- 2.3. Forecast peak demand for current day and next day.
- 2.4. Forecast changes in equipment status.
- 2.5. New facilities in place.
- 2.6. New or degraded special protection systems.
- 2.7. Emergency operating procedures in effect.
- 2.8. Severe weather, fire, or earthquake.
- 2.9. Multi-site sabotage.

## A. Introduction

1. **Title:** **Monitoring System Conditions**
2. **Number:** TOP-006-2
3. **Purpose:** To ensure critical reliability parameters are monitored in real-time.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - 4.3. Generator Operators.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.
  - R1.1. Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
  - R1.2. Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
- R2. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.
- R3. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.
- R4. Each Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.
- R5. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions and to indicate, if appropriate, the need for corrective action.

- R6.** Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
- R7.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

**C. Measures**

- M1.** The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6.** Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

**D. Compliance**

- 1. Compliance Monitoring Process**
  - 1.1. Compliance Monitoring Responsibility**



Regional Reliability Organizations shall be responsible for compliance monitoring.

### **1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

### **1.3. Data Retention**

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.

Each Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

### **1.4. Additional Compliance Information**

None.

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The responsible entity failed to know the status of all generation and transmission resources available for use, even though said information was reported by the Generator Operator, Transmission Operator, or Balancing Authority.
R1.1	N/A	N/A	N/A	The Generator Operator failed to inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
R1.2	N/A	N/A	N/A	The responsible entity failed to inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
R2	N/A	The responsible entity monitors the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, but is not aware of the status of rotating and static reactive resources.	The responsible entity fails to monitor all of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of all rotating and static reactive resources.	The responsible entity fails to monitor any of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

Requirement	Lower	Moderate	High	Severe
R3	The responsible entity failed to provide any of the appropriate technical information concerning protective relays to their operating personnel.	N/A	N/A	The responsible entity failed to provide all of the appropriate technical information concerning protective relays to their operating personnel.
R4	N/A	N/A	The responsible entity has either weather forecasts or past load patterns, available to predict the system's near-term load pattern, but not both.	The responsible entity failed to have both weather forecasts and past load patterns, available to predict the system's near-term load pattern.
R5	N/A	N/A	The responsible entity used monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions, but does not have indication of the need for corrective action.	The responsible entity failed to use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions.
R6	N/A	N/A	N/A	The responsible entity failed to use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
R7	N/A	N/A	N/A	The responsible entity failed to monitor system frequency.

**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2		Modified R4 Modified M4 Modified Data Retention for M4 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised

## A. Introduction

1. **Title:** **Emergency Operations Planning**
2. **Number:** EOP-001-~~0~~1
3. **Purpose:** Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.
4. **Applicability**
  - 4.1. Balancing Authorities.
  - 4.2. Transmission Operators.
5. **Proposed Effective Dates:** April 1, 2005

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Balancing Authorities shall have operating agreements with adjacent Balancing Authorities that shall, at a minimum, contain provisions for emergency assistance, including provisions to obtain emergency assistance from remote Balancing Authorities.
- ~~R2. The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.~~
- ~~R3.R2.~~ Each Transmission Operator and Balancing Authority shall:
  - ~~R3.1.R2.1.~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies for insufficient generating capacity.
  - ~~R3.2.R2.2.~~ Develop, maintain, and implement a set of plans to mitigate operating emergencies on the transmission system.
  - ~~R3.3.R2.3.~~ Develop, maintain, and implement a set of plans for load shedding.
  - ~~R3.4.R2.4.~~ Develop, maintain, and implement a set of plans for system restoration.
- R4.R3. Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:
  - R4.1.R3.1. Communications protocols to be used during emergencies.
  - R4.2.R3.2. A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

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~~R4.3.R3.3.~~ The tasks to be coordinated with and among adjacent Transmission Operators and Balancing Authorities.

~~R4.4.R3.4.~~ Staffing levels for the emergency.

~~R5.R4.~~ Each Transmission Operator and Balancing Authority shall include the applicable elements in Attachment 1-EOP-001-0 when developing an emergency plan.

~~R6.R5.~~ The Transmission Operator and Balancing Authority shall annually review and update each emergency plan. The Transmission Operator and Balancing Authority shall provide a copy of its updated emergency plans to its Reliability Coordinator and to neighboring Transmission Operators and Balancing Authorities.

~~R7.R6.~~ The Transmission Operator and Balancing Authority shall coordinate its emergency plans with other Transmission Operators and Balancing Authorities as appropriate. This coordination includes the following steps, as applicable:

~~R7.1.R6.1.~~ The Transmission Operator and Balancing Authority shall establish and maintain reliable communications between interconnected systems.

~~R7.2.R6.2.~~ The Transmission Operator and Balancing Authority shall arrange new interchange agreements to provide for emergency capacity or energy transfers if existing agreements cannot be used.

~~R7.3.R6.3.~~ The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)

~~R7.4.R6.4.~~ The Transmission Operator and Balancing Authority shall arrange deliveries of electrical energy or fuel from remote systems through normal operating channels.

### C. Measures

- M1. The Transmission Operator and Balancing Authority shall have its emergency plans available for review by the Regional Reliability Organization at all times.
- M2. The Transmission Operator and Balancing Authority shall have its two most recent annual self-assessments available for review by the Regional Reliability Organization at all times.

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

The Regional Reliability Organization shall review and evaluate emergency plans every three years to ensure that the plans consider the applicable elements of Attachment 1-EOP-001-0.

The Regional Reliability Organization may elect to request self-certification of the Transmission Operator and Balancing Authority in years that the full review is not done.

Reset: one calendar year.

##### 1.3. Data Retention

Current plan available at all times.

Violation Severity Levels (VSLs) for this standard were not approved by their ballot pool but were approved by the BOT on February 28, 2008 and the VSLs replace the Levels of Non-compliance.

When the BOT approves new VSLs for this standard, the new VSLs will replace those shown below. The new VSLs for R2 will be retired when EOP-001-1 becomes effective.

**1.4. Additional Compliance Information**

Not specified.

**~~2. Levels of Non-Compliance~~**

~~**2.1. Level 1:** One of the applicable elements of Attachment 1 EOP-001-0 has not been addressed in the emergency plans.~~

~~**2.2. Level 2:** Two of the applicable elements of Attachment 1 EOP-001-0 have not been addressed in the emergency plans.~~

~~**2.3. Level 3:** Three of the applicable elements of Attachment 1 EOP-001-0 have not been addressed in the emergency plans.~~

~~**1.5. Level 4:** Four or more of the applicable elements of Attachment 1 EOP-001-0 have not been addressed in the emergency plans or a plan does not exist.~~

**Standard EOP-001-0.1 — Emergency Operations Planning**

**2. Violation Severity Levels:**

Requirement	Lower	Moderate	High	Severe
R1	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for less than 25% of the adjacent BAs. Or less than 25% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 25% to 50% of the adjacent BAs.  Or 25 to 50% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 50% to 75% of the adjacent BAs.  Or 50% to 75% of those agreements do not contain provisions for emergency assistance.	The Balancing Authority failed to demonstrate the existence of the necessary operating agreements for 75% or more of the adjacent BAs.  Or more than 75% of those agreements do not contain provisions for emergency assistance.
<del>R2</del>	<del>The Transmission Operator has demonstrated the existence of the emergency load reduction plan but the plan will take longer than 30 minutes.</del>	<del>N/A</del>	<del>The Transmission Operator fails to include details on how load reduction is to be implemented in sufficient amount and time to mitigate IROL violation.</del>	<del>The Transmission Operator failed to demonstrate the existence of emergency load reduction plans for all identified IROLs.</del>
<del>R3R2</del>	The Transmission Operator or Balancing Authority failed to comply with one (1) of the <del>of</del> sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with four (4) of the sub-components.
<del>R3R2.1</del>	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of emergency plans to mitigate insufficient generating capacity emergency plans but the plans are not maintained.	The Transmission Operator or Balancing Authority's emergency plans to mitigate insufficient generating capacity emergency plans are <del>not</del> <del>neither</del> maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop emergency mitigation plans for insufficient generating capacity.
<del>R3R2.2</del>	The Transmission Operator or Balancing Authority's plans to mitigate transmission system emergencies are missing minor details or	The Transmission Operator or Balancing Authority's has demonstrated the existence of transmission system emergency plans but are not	The Transmission Operator or Balancing Authority's transmission system emergency plans are <del>not</del> <del>neither</del> maintained nor	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans



**Standard EOP-001-0.1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
	minor program/procedural elements.	maintained.	implemented.	for emergencies on the transmission system.
<del>R3</del> R2.3	The Transmission Operator or Balancing Authority's load shedding plans are <del>is</del> missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's has demonstrated the existence of load shedding plans but are not maintained.	The Transmission Operator or Balancing Authority's load shedding plans are partially compliant with the requirement but are <del>not</del> <u>neither</u> maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement load shedding plans.
<del>R3</del> R2.4	The Transmission Operator or Balancing Authority's system restoration plans are missing minor details or minor program/procedural elements.	The Transmission Operator or Balancing Authority's system restoration plans are partially compliant with the requirement but are not maintained.	The Transmission Operator or Balancing Authority's restoration plans are <del>not</del> <u>neither</u> maintained nor implemented.	The Transmission Operator or Balancing Authority has failed to develop, maintain, and implement operating emergency mitigation plans for system restoration.
<del>R4</del> R3	The Transmission Operator or Balancing Authority failed to comply with one (1) of the <del>of</del> sub-components.	The Transmission Operator or Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator or Balancing Authority has failed to comply with all four (4) of the sub-components.
<del>R4</del> R3.1	The Transmission Operator or Balancing Authority's communication protocols included in the emergency plan are missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to include communication protocols in its emergency plans to mitigate operating emergencies.

**Standard EOP-001-0.1 — Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
<u>R4R3.2</u>	The Transmission Operator or Balancing Authority's list of controlling actions has resulted in meeting the intent of the requirement but is missing minor program/procedural elements.	N/A	The Transmission Operator or Balancing Authority provided a list of controlling actions, however the actions fail to resolve the emergency within NERC-established timelines.	The Transmission Operator or Balancing Authority has failed to provide a list of controlling actions to resolve the emergency.
<u>R4R3.3</u>	The Transmission Operator or Balancing Authority has demonstrated coordination with Transmission Operators and Balancing Authorities but is missing minor program/procedural elements.	N/A	N/A	The Transmission Operator or Balancing Authority has failed to demonstrate the tasks to be coordinated with adjacent Transmission Operator and Balancing Authorities as directed by the requirement.
<u>R4R3.4</u>	The Transmission Operator or Balancing Authority's emergency plan does not include staffing levels for the emergency	N/A	N/A	N/A
<u>R5R4</u>	The Transmission Operator and Balancing Authority's emergency plan has complied with 90% or more of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 70% to 90% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with between 50% to 70% of the number of sub-components.	The Transmission Operator and Balancing Authority's emergency plan has complied with 50% or less of the number of sub-components

**Standard EOP-001-~~0~~1— Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
<del>R6</del> <u>R5</u>	The Transmission Operator and Balancing Authority is missing minor program/procedural elements.	The Transmission Operator and Balancing Authority has failed to annually review one of it's emergency plans	The Transmission Operator and Balancing Authority has failed to annually review <del>2</del> <u>two</u> of it's emergency plans or communicate with <del>1</del> <u>one</u> of it's neighboring Balancing Authorities.	The Transmission Operator and Balancing Authority has failed to annually review and/or communicate any emergency plans with it's Reliability Coordinator, neighboring Transmission Operators or Balancing Authorities.
<del>R7</del> <u>R6</u>	The Transmission Operator and/or the Balancing Authority failed to comply with one (1) of the <del>of</del> sub-components.	The Transmission Operator and/or the Balancing Authority failed to comply with two (2) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with three (3) of the sub-components.	The Transmission Operator and/or the Balancing Authority has failed to comply with four (4) or more of the sub-components.
<del>R7</del> <u>R6.1</u>	The Transmission Operator or Balancing Authority has failed to establish and maintain reliable communication between interconnected systems.	N/A	N/A	N/A
<del>R7</del> <u>R6.2</u>	The Transmission Operator or Balancing Authority has failed to arrange new interchange agreements to provide for emergency capacity or energy transfers with required entities when existing agreements could not be used.	N/A	N/A	N/A

**Standard EOP-001-0-1— Emergency Operations Planning**

Requirement	Lower	Moderate	High	Severe
<p><u>R7R6.3</u></p>	<p>The Transmission Operator or Balancing Authority has failed to coordinate transmission and generator maintenance schedules to maximize capacity or conserve fuel in short supply.</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p><u>R7R6.4</u></p>	<p>The Transmission Operator or Balancing Authority has failed to arrange for deliveries of electrical energy or fuel from remote systems through normal operating channels.</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Deleted R2</u> <u>Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels</u> <u>Corrected typographical errors in BOT approved version of VSLs</u>	<u>Revised</u>

**Attachment 1-EOP-001-0**

**Elements for Consideration in Development of Emergency Plans**

1. Fuel supply and inventory — An adequate fuel supply and inventory plan that recognizes reasonable delays or problems in the delivery or production of fuel.
2. Fuel switching — Fuel switching plans for units for which fuel supply shortages may occur, e.g., gas and light oil.
3. Environmental constraints — Plans to seek removal of environmental constraints for generating units and plants.
4. System energy use — The reduction of the system’s own energy use to a minimum.
5. Public appeals — Appeals to the public through all media for voluntary load reductions and energy conservation including educational messages on how to accomplish such load reduction and conservation.
6. Load management — Implementation of load management and voltage reductions, if appropriate.
7. Optimize fuel supply — The operation of all generating sources to optimize the availability.
8. Appeals to customers to use alternate fuels — In a fuel emergency, appeals to large industrial and commercial customers to reduce non-essential energy use and maximize the use of customer-owned generation that rely on fuels other than the one in short supply.
9. Interruptible and curtailable loads — Use of interruptible and curtailable customer load to reduce capacity requirements or to conserve the fuel in short supply.
10. Maximizing generator output and availability — The operation of all generating sources to maximize output and availability. This should include plans to winterize units and plants during extreme cold weather.
11. Notifying IPPs — Notification of cogeneration and independent power producers to maximize output and availability.
12. Requests of government — Requests to appropriate government agencies to implement programs to achieve necessary energy reductions.
13. Load curtailment — A mandatory load curtailment plan to use as a last resort. This plan should address the needs of critical loads essential to the health, safety, and welfare of the community. Address firm load curtailment.
14. Notification of government agencies — Notification of appropriate government agencies as the various steps of the emergency plan are implemented.
15. Notifications to operating entities — Notifications to other operating entities as steps in emergency plan are implemented.

## A. Introduction

1. **Title:** Reliability Coordination — Facilities
2. **Number:** IRO 002-~~12~~
3. **Purpose:** Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.
4. **Applicability**
  - 4.1. Reliability Coordinators.

**5. Proposed Effective Date:** ~~January 1, 2007~~ First day of first quarter, three months after regulatory approvals.

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after Board of Trustee adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

**R1.** Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.

~~**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities, or adjacent Reliability Coordinators.~~

**R3.R2.** Each Reliability Coordinator — or its Transmission Operators and Balancing Authorities — shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.

**R4.R3.** Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.

**R5.R4.** Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.

**R5.** Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric

System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.

**R7.R6.** Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre- and post-contingency analysis capabilities (thermal, stability, and voltage), and wide-area overview displays.

**R8.R7.** Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.

**R9.R8.** Each Reliability Coordinator shall control its Reliability Coordinator analysis tools, including approvals for planned maintenance. Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages.

### C. Measures

**M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 3.

**M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data-link facility description document, computer print-out, training-document, or other equivalent evidence that will be used to confirm that it has data links with entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 43.

~~**R10.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a letter to Transmission Operators, Balancing Authorities, Transmission Owners, Generator Owners, Generator Operators, and Load Serving Entities, or adjacent Reliability Coordinators, or other equivalent evidence that will be used to confirm that the Reliability Coordinator has requested the data required to support its reliability coordination tasks. (Requirement 2)~~

**M4.M3.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.

**M5.M4.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 76.

**M6.M5.** Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 87)



M7.M6. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 9-8 Part 1.

M8.M7. Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 9-8 Part 2.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance. Monitoring.

#### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### 1.3. Data Retention

Each Reliability Coordinator shall have current in-force documents used to show compliance with Measures 1 through 87.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

#### 1.4. Additional Compliance Information

None.

~~2. Levels of Non-Compliance for a Reliability Coordinator~~

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Did not confirm that the network used for data exchange to other Reliability Coordinators is secure as specified in R3.~~

~~2.3. Level 3: There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~2.3.1 Has not requested the data required to support its reliability coordination tasks. (Requirement 2)~~

~~2.4. Does not control its Reliability Coordinator analysis tools, including the exercising of final approvals for planned maintenance (R7) or does not have current procedures in place to mitigate the effects of analysis tool outages as specified in R9.~~

~~2.5. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.5.1 Does not have or could not demonstrate the use of voice communication facilities (or show data links) to one or more Transmission Operators, Generator Operators or Balancing Authorities with authority over Bulk Electrical System equipment or with one or more neighboring Reliability Coordinators. (R1 and R4)~~

~~2.5.2 Does not have real-time monitoring capability of its Reliability Coordinator Area and surrounding Reliability Coordinator Areas as specified in R5.~~

~~1.4.1 Does not have a documented procedure for the use of its backup monitoring facilities. (R8)~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator has demonstrated communication facilities for both voice and data exist to all appropriate entities and that they are staffed and available but they are less than adequate.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with one appropriate entity or 2) Data links with one appropriate entity.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with two appropriate entities or 2) Data links with two appropriate entities.	The Reliability Coordinator has failed to demonstrate that is has: 1) Voice communication links with more than two appropriate entities or 2) Data links with more than two appropriate entities or 3) Communication facilities are not staffed or 4) Communication facilities are not ready.

Standard IRO-002-12 — Reliability Coordination — Facilities

Requirement	Lower	Moderate	High	Severe
R2	<p>The Reliability Coordinator demonstrated that it</p> <p>1) determined its data requirements and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators with a material impact on the Bulk Electric System in its Reliability Coordination Area but did not request the data from Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators with minimal impact on the Bulk Electric System in its Reliability Coordination Area or</p> <p>2) determined its data requirements necessary to perform its reliability functions with the exceptions of data that may be needed for administrative purposes such as data</p>	<p>The Reliability Coordinator demonstrated that it determined the majority but not all of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</p>	<p>The Reliability Coordinator demonstrated that it determined</p> <p>1) some but less than the majority of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators or</p> <p>2) all of its data requirements necessary to support its reliability coordination functions but failed to demonstrate that it requested data from two of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</p>	<p>The Reliability Coordinator failed to demonstrate that it</p> <p>1) determined its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators or</p> <p>2) requested the data from three or more of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities or Adjacent Reliability Coordinators.</p>

Standard IRO-002-12 — Reliability Coordination — Facilities

Requirement	Lower	Moderate	High	Severe
	reporting-			

**Standard IRO-002-1.2 — Reliability Coordination — Facilities**

Requirement	Lower	Moderate	High	Severe
<u>R3R2</u>	N/A	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with one of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with two of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.	The Reliability Coordinator or designated Transmission Operator and Balancing Authority has failed to demonstrate it provided or arranged provision for the exchange of data with three of the other Reliability Coordinators or Transmission Operators and Balancing Authorities.
<u>R4R3</u>	N/A	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to one of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to two or more of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with neighboring Reliability Coordinators.	The Reliability Coordinator has failed to demonstrate multi-directional communication capabilities to all of the Transmission Operators and Balancing Authorities in its Reliability Coordinator Area and with all neighboring Reliability Coordinators.
<u>R5R4</u>	The Reliability Coordinator's monitoring systems provide information in a way that is not easily understood and interpreted by the Reliability Coordinator's operating personnel or particular emphasis was not given to alarm management and awareness systems, automated data transfers and synchronized information systems.	The Reliability Coordinator has failed to demonstrate that it has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that one potential or actual SOL or IROL violation is not identified.	The Reliability Coordinator has failed to demonstrate that it has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that two or more potential and actual SOL and IROL violations are not identified.	The Reliability Coordinator has failed to demonstrate that it has detailed real-time monitoring capabilities in its Reliability Coordinator Area and sufficient monitoring capabilities of its surrounding Reliability Coordinator Areas to ensure that all potential and actual SOL and IROL violations are identified.

**Standard IRO-002-1.2 — Reliability Coordination — Facilities**

Requirement	Lower	Moderate	High	Severe
<u>R6R5</u>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in one SOL violations or</li> <li>2) or operating reserves for a small portion of the Reliability Authority Area.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or to system restoration,</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations, or</li> <li>3) operating reserves.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing two or more IROLs; or one IROL and to system restoration,</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements that could result in multiple SOL violations and operating reserves, or</li> <li>3) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing one IROL or system restoration and operating reserves.</li> </ol>	<p>The Reliability Coordinator failed to monitor:</p> <ol style="list-style-type: none"> <li>1) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all IROLs and to system restoration, or</li> <li>2) the status, real power flow or reactive power flow of Bulk Electric System elements critical to assessing all SOL violations and operating reserves.</li> </ol>
<u>R7R6</u>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing all pre-contingency flows,</li> <li>2) analysis tools capable of assessing all post-contingency flows, or</li> <li>3) all necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing the majority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing the majority of post-contingency flows, or</li> <li>3) the majority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing a minority of pre-contingency flows,</li> <li>2) analysis tools capable of assessing a minority of post-contingency flows, or</li> <li>3) a minority of necessary wide-area overview displays exist.</li> </ol>	<p>The Reliability Coordinator failed to demonstrate that it has:</p> <ol style="list-style-type: none"> <li>1) analysis tools capable of assessing any pre-contingency flows,</li> <li>2) analysis tools capable of assessing any post-contingency flows, or</li> <li>3) any necessary wide-area overview displays exist.</li> </ol>

Standard IRO-002-12 — Reliability Coordination — Facilities

Requirement	Lower	Moderate	High	Severe
<u>R8R7</u>	The Reliability Coordinator failed to demonstrate that: 1) it or a delegated entity monitored SOLs when the main monitoring system was unavailable or 2) it has provisions to monitor SOLs when the main monitoring system is not available.	The Reliability Coordinator failed to demonstrate that: 1) it or a delegated entity monitored one IROL when the main monitoring system was unavailable or 2) it has provisions to monitor one IROL when the main monitoring system is not available.	The Reliability Coordinator failed to demonstrate that: 1) it or a delegated entity monitored two or more IROLs when the main monitoring system was unavailable, 2) it or a delegated entity monitored SOLs and one IROL when the main monitoring system was unavailable 3) it has provisions to monitor two or <del>or</del> more IROLs when the main monitoring system is not available, or 4) it has provisions to monitor SOLs and one IROL when the main monitoring system was unavailable.	<b>R9.</b> The Reliability Coordinator failed to demonstrate that it continuously monitored its Reliability Authority Area.
<u>R9R8</u>	Reliability Coordinator has approval rights for planned maintenance outages of analysis tools but does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.	Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools.	Reliability Coordinator has approval rights for planned maintenance but does not have plans to mitigate the effects of outages of the analysis tools and does not have approval rights for work on analysis tools that creates a greater risk of an unplanned outage of the tools.	Reliability Coordinator approval is not required for planned maintenance.



**E. Regional DifferencesVariances**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
<u>2</u>		<u>Deleted R2, M3 and associated compliance elements</u> <u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u> <u>Corrected typographical errors in BOT approved version of VSLs</u>	<u>Revised</u>

## A. Introduction

1. **Title:** Reliability Coordination — Operations Planning
2. **Number:** IRO-004-~~1~~2
3. **Purpose:** Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions. System studies must be conducted to highlight potential interface and other operating limits, including overloaded transmission lines and transformers, voltage and stability limits, etc. Plans must be developed to alleviate System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) violations.

4. **Applicability**

~~4.1. Reliability Coordinators.~~

~~4.2.4.1. Balancing Authorities.~~

~~4.3.4.2. Transmission Operators.~~

~~4.4.4.3. Transmission Service Providers.~~

~~4.5. Transmission Owners.~~

~~4.6. Generator Owners.~~

~~4.7. Generator Operators.~~

~~4.8. Load-Serving Entities.~~

~~5. Effective Date: November 1, 2006~~

~~5. In those jurisdictions where no regulatory approval is required, the standard shall be retired on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.~~

~~In those jurisdictions where regulatory approval is required, the standard shall be retired effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.~~

## B. Requirements

~~R1. Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.~~

~~R2. Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.~~

~~R3. Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.~~

~~R4. Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide~~

~~information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.~~

~~R5. Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.~~

~~R6. If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.~~

~~R7.~~**R1.** Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.

## C. Measures

~~M1. Evidence that the Reliability Coordinator conducted next day contingency analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System could be operated reliably in anticipated normal and Contingency conditions. None~~

## D. Compliance

### 1. Compliance Monitoring Process

Entities will be selected for an on-site audit at least every three years. For a selected 30-day period in the previous three calendar months prior to the on site audit, Reliability Coordinators will be asked to provide documentation showing that next-day reliability analyses were conducted each day to ensure the bulk power system could be operated in anticipated normal and Contingency conditions; and that they identified potential interface and other operating limits including overloaded transmission lines and transformers, voltage and stability limits, etc.

#### 1.1. Compliance Monitoring Responsibility

~~Self-Certification: Each Reliability Coordinator must annually self-certify compliance to its Regional Reliability Organization with the completion of the studies and action plans in Requirements R1, R2 and R3.~~

~~Exception Reporting: Reliability Coordinators will prepare a monthly report to the Regional Reliability Organization for each month that system studies were not conducted, indicating the dates that studies were not done and the reason why.~~

#### 1.2. Compliance Monitoring Period and Reset Time Frame

~~One year without a violation from the time of the violation.~~

#### 1.3. Data Retention

~~Documentation shall be available for 3 months to provide verification that system studies were performed as required.~~

#### 1.4. Additional Compliance Information

~~None identified.~~

~~2. Levels of Non-Compliance~~

~~2.1. Level 1: System studies were not conducted for one day in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.2. Level 2: System studies were not conducted for 2-3 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

~~2.3. Level 3: System studies were not conducted for 4-5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.~~

1.5. **Level 4:** System studies were not conducted for more than 5 days in a calendar month and/or the action plans were not developed to maintain transmission loading within acceptable limits for potential interface and other IROL violations.

**Standard IRO-004-1.2 — Reliability Coordination — Operations Planning**

**2. Violation Severity Levels**

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator failed to conduct next-day reliability analyses or contingency analysis for its Reliability Coordinator Area for one (1) day during a calendar month.	The Reliability Coordinator failed to conduct next-day reliability analyses or contingency analysis for its Reliability Coordinator Area for two (2) to three (3) days during a calendar month.	The Reliability Coordinator failed to conduct next-day reliability analyses or contingency analysis for its Reliability Coordinator Area for four (4) to five (5) days during a calendar month.	The Reliability Coordinator failed to conduct next-day reliability analyses or contingency analysis for its Reliability Coordinator Area for more than five (5) days during a calendar month.
R2	N/A	N/A	N/A	The Reliability Coordinator failed to monitor parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.
R3	The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for one (1) day during a calendar month.	The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for two (2) to three (3) days during a calendar month.	The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for four (4) to five (5) days during a calendar month.	The Reliability Coordinator, in conjunction with its Transmission Operators and Balancing Authorities, failed to develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs for more than five (5) days during a calendar month.

Standard IRO-004-12 — Reliability Coordination — Operations Planning

Requirement	Lower	Moderate	High	Severe
R4	The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1 R4 for one (1) day during a calendar month.	The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1 R4 for two (2) to three (3) days during a calendar month.	The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1 R4 for four (4) to five (5) days during a calendar month.	The responsible entity in the Reliability Coordinator Area provided the information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions, but said information was provided after the required time as stated in IRO-004-1 R4 for more than five (5) days during a calendar month.
R5	The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for one (1) day during a calendar month.	The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for two (2) to three (3) days during a calendar month.	The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for four (4) to five (5) days during a calendar month.	The Reliability Coordinator failed to share the results of its system studies, when conditions warranted or was requested, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area for more than five (5) days during a calendar month.
R6	The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on one (1) occasion during a calendar month.	The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on two (2) to three (3) occasions during a calendar month.	The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on four (4) to five (5) occasions during a calendar month.	The Reliability Coordinator failed to direct action to address a potential SOL or IROL violation on more than five (5) occasions during a calendar month.

**Standard IRO-004-12 — Reliability Coordination — Operations Planning**

Requirement	Lower	Moderate	High	Severe
R7	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on one (1) occasion during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on two (2) to three (3) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on four (4) to five (5) occasions during a calendar month.	The responsible entity failed to comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events on more than five (5) occasions during a calendar month.

E. Regional ~~Differences~~Variances

~~None identified.~~

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Replaced Levels of Non-compliance with the February 28, 2008 BOT approved Violation Severity Levels</u> <u>Retired R1 through R6, and associated Measures, Data Retention, and VSLs</u>	<u>Revision</u>



## A. Introduction

1. **Title:** Reliability Coordination — Current Day Operations
2. **Number:** IRO-005-~~2~~3
3. **Purpose:** The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Transmission Service Providers.
  - 4.5. Generator Operators.
  - 4.6. Load-Serving Entities.
  - 4.7. Purchasing-Selling Entities.
5. **Effective Date:** ~~January 1, 2007~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:
  - R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.
  - R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.3. Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
  - R1.4. System real and reactive reserves (actual versus required).
  - R1.5. Capacity and energy adequacy conditions.
  - R1.6. Current ACE for all its Balancing Authorities.

**R1.7.** Current local or Transmission Loading Relief procedures in effect.

**R1.8.** Planned generation dispatches.

**R1.9.** Planned transmission or generation outages.

**R1.10.** Contingency events.

~~**R2.** Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Intereconnection.~~

~~**R3.** As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.~~

**R4.R2.** Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.

~~**R5.** Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.~~

**R6.R3.** Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.

**R7.R4.** The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.

**R8.R5.** Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

**R9.R6.** The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

**R10.R7.** As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.

**R11.R8.** The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.

**R12.R9.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

~~**R13.R10.** Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection.~~ In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.

~~**R14.R11.** Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide area view.~~ The Transmission Service Provider s shall respect ~~these~~ SOLs ~~or~~ and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.

**R15.R12.** Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.

~~**R16.** Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.~~

~~**R17.** When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.~~

## **C. Measures**

**M1.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS

availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.

~~M2. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Historical Tag Archive information, Interchange Transaction records, computer printouts, voice recordings or transcripts of voice recordings or equivalent evidence that will be used to confirm that it was aware of and made Interchange Transaction information available to all other Reliability Coordinators, as specified in Requirement 2.~~

~~M3. If a potential or actual IROL violation occurs, the Reliability Coordinator involved in the event shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, system event logs, operator action notes or equivalent evidence that will be used to determine if it initiated control actions or emergency procedures to relieve that IROL violation within 30 minutes. (Requirement 3 Part 2 and Requirement 5)~~

M4.M2. If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2 and Requirement 10)

M5.M3. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 6)

M6.M4. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it disseminated information within its Reliability Coordinator Area in accordance with Requirement 7.

M7.M5. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 8 Part 1.

M8.M6. The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 8 Part 2)

M9.M7. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, ~~IROL~~, CPS,

or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1)

**M10.M8.** If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 11 Part 1)

**M11.M9.** If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 12)

**M12.M10.** If there is an instance where there is a disagreement on a derived limit, the ~~Reliability Coordinator~~, Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated to the most limiting parameter. (Part 2 of Requirement 13)

~~M13. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it provided SOL and IROL information to Transmission Service Providers within its Reliability Coordinator Area. (Requirement 14, Part 1)~~

**M14.M11.** The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14 Part 2)

**M15.M12.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area as specified in Requirement 15 Part 1.

**M16.M13.** The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 15 Part 2.

M17.M14. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has been mitigated. (Requirement 15 Part 3)

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance monitoring.

#### 1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

#### 1.3. Data Retention

For Measures 1 and ~~4~~9, each Reliability Coordinator shall have its current in-force documents as evidence.

For Measures ~~2-10~~8 and ~~Measure 13, and~~ Measures ~~15-12~~13 through ~~16~~13, the Reliability Coordinator shall keep 90 days of historical data (evidence).

For Measure ~~8~~6, the Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence).

For Measure ~~12~~10, the ~~Reliability Coordinator,~~ Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep 90 days of historical data (evidence).

For Measure ~~14~~11, the Transmission Service Provider shall keep 90 days of historical data (evidence).

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

None.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

~~**2. Levels of Non-Compliance for a Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider**~~

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Not applicable.~~

~~2.3. Level 3: Not applicable.~~

~~2.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.4.1 Did not follow the Reliability Coordinator's directives in accordance with R8 Part 2).~~

~~2.4.2 Did not operate to the most limiting parameter when a difference in derived limits existed. (R13 Part 2)~~

~~**3. Levels of Non-Compliance for a Reliability Coordinator:**~~

~~3.1. Level 1: Not applicable.~~

~~3.2. Level 2: Did not make Interchange Transaction information available to all other Reliability Coordinators in the Interconnection. (Requirement 2)~~

~~3.3. Level 3: There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~3.3.1 Did not communicate to each of its Balancing Authorities and Transmission Operators to make them aware of GMD forecast information or did not assist in the development of any required response plans to a predicted GMD. (Requirement 6)~~

~~3.3.2 Did not disseminate information within its Reliability Coordinator Area. (Requirement 7)~~

~~3.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~3.4.1 Does not meet one or more of the requirements as specified in requirement 1 (Requirements 1.1 through R1.9)~~

~~3.4.2 Did not make Interchange Transaction information available to all other Reliability Coordinators. (Requirement 2)~~

~~3.4.3~~ Did not initiate control actions or emergency procedures to relieve an IROL violation without delay, and no longer than 30 minutes. (Requirement 3 Part 2 and Requirement 5)

~~3.4.4~~ Did not direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 4 Part 2)

~~3.4.5~~ Did not monitor the system frequency or each of its Balancing Authorities performance or did not direct rebalancing to return to DCS and CPS compliance. (Requirement 8 Part 1)

~~3.4.6~~ Did not coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. (Requirement 9)

~~3.4.7~~ When it identified a source of large Area Control Errors, it did not initiate corrective actions with the appropriate Balancing Authority if the problem was inside its Reliability Coordinator Area. (Requirement 11 part 1)

~~3.4.8~~ Did not provide evidence that it was aware of the impact of the operation of a Special Protection System on inter-area flows. (Requirement 12)

~~3.4.9~~ Did not operate to the most limiting parameter when a difference in derived limits existed. (Requirement 13 Part 2)

~~3.4.10~~ Did not provide Transmission Service Providers with SOLs or IROLs (within the Reliability Coordinator's wide-area view) (Requirement 14 Part 1)

~~3.4.11~~ Did not issue alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area. (Requirement 15)

#### ~~4. Levels of Non-Compliance for a Transmission Service Provider~~

~~4.1. Level 1: Not applicable.~~

~~4.2. Level 2: Not applicable.~~

~~4.3. Level 3: Not applicable.~~

~~4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~4.4.1~~ Did not operate to the most limiting parameter when a difference in derived limits existed. (R13 Part 2)

~~1.4.1~~ Did not respect the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 14 Part 2)



2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	The Reliability Coordinator failed to monitor one (1) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor two (2) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor more than three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.
R1.1	The Reliability Coordinator failed to monitor the current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.	N/A	N/A	N/A
R1.2	The Reliability Coordinator failed to monitor current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan’s viability and scope.	N/A	N/A	N/A

**Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations**

Requirement	Lower	Moderate	High	Severe
R1.3	The Reliability Coordinator failed to monitor current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.	N/A	N/A	N/A
R1.4	The Reliability Coordinator failed to monitor system real and reactive reserves (actual versus required).	N/A	N/A	N/A
R1.5	The Reliability Coordinator failed to monitor capacity and energy adequacy conditions.	N/A	N/A	N/A
R1.6	The Reliability Coordinator failed to monitor current ACE for all its Balancing Authorities.	N/A	N/A	N/A
R1.7	The Reliability Coordinator failed to monitor current local or Transmission Loading Relief procedures in effect.	N/A	N/A	N/A
R1.8	The Reliability Coordinator failed to monitor planned generation dispatches.	N/A	N/A	N/A
R1.9	The Reliability Coordinator failed to monitor planned transmission or generation outages.	N/A	N/A	N/A

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R1.10	The Reliability Coordinator failed to monitor contingency events.	N/A	N/A	N/A
<del>R2</del>	<del>N/A</del>	<del>N/A</del>	<del>The Reliability Coordinator was aware of all Interchange Transactions that wheeled through, sourced, or sunked in its Reliability Coordinator Area, but failed to make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</del>	<del>The Reliability Coordinator failed to be aware of all Interchange Transactions that wheeled through, sourced, or sunked in its Reliability Coordinator Area, and failed to make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.</del>
<del>R3</del>	<del>N/A</del>	<del>The Reliability Coordinator worked with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and initiated control actions or emergency procedures to relieve the violation within 30 minutes, but failed to ensure all resources, including load shedding, were available to address a potential or actual IROL violation.</del>	<del>The Reliability Coordinator worked with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and ensured all resources, including load shedding, were available to address a potential or actual IROL violation, but failed to initiate control actions or emergency procedures to relieve the violation within 30 minutes.</del>	<del>The Reliability Coordinator failed to work with its Transmission Operators and Balancing Authorities, as portions of the transmission system approached or exceeded SOLs or IROLs, to evaluate and assess any additional Interchange Schedules that would violate those limits and failed to initiate control actions or emergency procedures to relieve the violation within 30 minutes.</del>

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R4R2</u>	N/A	The Reliability Coordinator failed to direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities.	The Reliability Coordinator failed to issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	The Reliability Coordinator failed to monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves was provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.
<u>R5</u>	<u>N/A</u>	<u>N/A</u>	<u>The Reliability Coordinator identified the cause of a potential or actual SOL or IROL violation, but failed to initiate a control action or emergency procedure to relieve the potential or actual IROL violation within 30 minutes.</u>	<u>The Reliability Coordinator failed to identify the cause of a potential or actual SOL or IROL violation and failed to initiate a control action or emergency procedure to relieve the potential or actual IROL violation.</u>
<u>R6R3</u>	N/A	N/A	The Reliability Coordinator ensured its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information, but failed to assist, when needed, in the development of any required response plans.	The Reliability Coordinator failed to ensure its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information.

Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R7R4</u>	N/A	N/A	N/A	The Reliability Coordinator failed to disseminate information within its Reliability Coordinator Area, when required.
<u>R8R5</u>	N/A	N/A	The Reliability Coordinator monitored system frequency and its Balancing Authorities' performance but failed to direct any necessary rebalancing to return to CPS and DCS compliance.	The Reliability Coordinator failed to monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance or the responsible entity failed to utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.

Standard IRO-005-~~2~~3— Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<del>R9R6</del>	N/A	The Reliability Coordinator coordinated with Transmission Operators, Balancing Authorities, and Generator Operators, as needed, to develop action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations but failed to implement said plans, or the Reliability Coordinator coordinated pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in the real-time reliability analysis timeframe but failed to coordinate pending generation and transmission maintenance outages in the next-day reliability analysis timeframe.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations, or the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.	The Reliability Coordinator failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del> , CPS, or DCS violations and the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.
<del>R10R7</del>	N/A	N/A	N/A	The Reliability Coordinator failed to assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities, when necessary.

Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<del>R11R8</del>	N/A	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange and discussed corrective actions with the appropriate Balancing Authority but failed to direct the Balancing Authority to comply with CPS and DCS.	The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange but failed to discuss corrective actions with the appropriate Balancing Authority.	The Reliability Coordinator failed to identify sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange.
<del>R12R9</del>	N/A	N/A	N/A	The Reliability Coordinator failed to be aware of the impact on inter-area flows of an inter-Balancing Authority or inter-Transmission Operator, following the operation of a Special Protection System that is armed (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation), or the Transmission Operator failed to immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.

Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R13R10</u>	N/A	N/A	N/A	<p><del>The Reliability Coordinator failed to shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load Serving Entities, and Purchasing-Selling Entities operated to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area could result in a SOL or IROL violation in another area of the Interconnection or t</del>The responsible entity failed to operate the Bulk Electric System to the most limiting parameter in instances where there was a difference in derived limits.-</p>



Standard IRO-005-2.3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
<u>R14R11</u>	N/A	N/A	N/A	<p><del>The Reliability Coordinator failed to make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view, or the</del> Transmission Service Providers failed to respect <del>these</del> SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p>
<u>R15R12</u>	N/A	The Reliability Coordinator failed to notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.	N/A	The Reliability Coordinator who foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area failed to issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area, or the receiving Reliability Coordinator failed to disseminate this information to its impacted Transmission Operators and Balancing Authorities.

Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R16	N/A	N/A	<p><del>The Reliability Coordinator confirmed the reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas and discussed options to mitigate potential or actual SOL or IROL violations, but failed to take actions as necessary to always act in the best interests of the Interconnection at all times.</del></p>	<p><del>The Reliability Coordinator failed to confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas, or failed to discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</del></p>

Standard IRO-005-~~2~~3 — Reliability Coordination — Current Day Operations

Requirement	Lower	Moderate	High	Severe
R17	N/A	N/A	N/A	<p>The Reliability Coordinator either failed to evaluate the local and wide-area impacts of an IROL or SOL that was exceeded, in either real-time or post-contingency, or the Reliability Coordinator evaluated the local and wide-area impacts of an IROL or SOL that was exceeded, both real-time and post-contingency, and determined that the actions being taken were not appropriate and sufficient to return the system to within IROL in thirty (30) minutes, but failed to direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>

**E. Regional Differences**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Retired R2, R3, R5; modified R9, R13 and R14; retired R16 and R17</u> <u>Retired M2 and M3; modified M9 and M12; retired M13</u> <u>Made conforming changes to data retention</u> <u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u> <u>Retired VSLs associated with R2, R3, R5, R16 and R17;</u> <u>Modified VSLs associated with R9 and R13, and R14</u>	<u>Revised</u>

## A. Introduction

1. **Title:** **Planned Outage Coordination**
2. **Number:** TOP-003-01
3. **Purpose:** Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.
4. **Applicability**
  - 4.1. Generator Operators.
  - 4.2. Transmission Operators.
  - 4.3. Balancing Authorities.
  - 4.4. Reliability Coordinators.
5. **Proposed Effective Date:** April 1, 2005

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Generator Operators and Transmission Operators shall provide planned outage information.
  - R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
  - R1.2. Each Transmission Operator shall provide outage information daily to ~~its Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~
  - R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.

- R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.
- R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
- R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.

### C. Measures

- M1. Evidence that the Generator Operator, Transmission Operator, and Balancing Authority, ~~and Reliability Coordinator~~ reported and coordinated scheduled outage information as indicated in the requirements above.

### D. Compliance

#### 1. Compliance Monitoring Process

Each Regional Reliability Organization shall conduct a review every three years to ensure that each responsible entity has a process in place to provide planned generator and/or bulk transmission outage information to their Reliability Coordinator, and with neighboring Transmission Operators and Balancing Authorities.

Investigation: At the discretion of the Regional Reliability Organization or NERC, an investigation may be initiated to review the planned outage process of a monitored entity due to a complaint of non-compliance by another entity. Notification of an investigation must be made by the Regional Reliability Organization to the entity being investigated as soon as possible, but no later than 60 days after the event. The form and manner of the investigation will be set by NERC and/or the Regional Reliability Organization.

#### 1.1. Compliance Monitoring Responsibility

A Reliability Coordinator makes a request for an outage to “not be taken” because of a reliability impact on the grid and the outage is still taken. The Reliability Coordinator must provide all its documentation within three business days to the Regional Reliability Organization. Each Regional Reliability Organization shall report compliance and violations to NERC via the NERC Compliance Reporting process.

#### 1.2. Compliance Monitoring Period and Reset Timeframe

One calendar year without a violation from the time of the violation.

#### 1.3. Data Retention

One calendar year.

**1.4. Additional Compliance Information**

Not specified.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

**2. Levels of Non-Compliance**

~~2.1. Level 1: Each entity responsible for reporting information under Requirements R1 and R3 has a process in place to provide information to their Reliability Coordinator but does not have a process in place (where permitted by legal agreements) to provide this information to the neighboring Balancing Authority or Transmission Operator.~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

~~1.5. Level 4: — There is no process in place to exchange outage information, or the entity responsible for reporting information under Requirements R1 to R3 does not follow the directives of the Reliability Coordinator to cancel or reschedule an outage.~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The Generator Operator failed to provide outage information, in accordance with its Transmission Operators established outage reporting requirements, to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW).



**Standard-TOP-003-0.1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R1.1	N/A	N/A	N/A	The Transmission Operator failed to provide outage information, in accordance with its Reliability Coordinators established outage reporting requirement, to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation.
R1.2	The responsible entity failed to provide the information by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.	N/A	N/A	N/A

**Standard-TOP-003-0.1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R1.3	N/A	N/A	N/A	The responsible entity failed to plan or coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators when required.
R2	The responsible entity planned and coordinated scheduled outages of telemetering and control equipment and associated communication channels with its Reliability Coordinator, but failed to coordinate with affected neighboring Transmission Operators, Balancing Authorities, and Generator Operators.	N/A	N/A	The responsible entity failed to plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
R3	N/A	N/A	N/A	The Reliability Coordinator failed to resolve any scheduling of potential reliability conflicts.

**Standard-TOP-003-0.1 — Planned Outage Coordination**

Requirement	Lower	Moderate	High	Severe
R4	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 30 minutes but less than or equal to 35 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 35 minutes but less than or equal to 40 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 40 minutes but less than or equal to 45 minutes.	The Transmission Operator entering an unknown operating state (i.e., any state for which valid operating limits have not been determined), failed to restore operations to respect proven reliable power system limits for more than 45 minutes.

E. Regional ~~Differences~~Variances

None identified.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Modified R1.2</u> <u>Modified M1</u> <u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u>	<u>Revised</u>

## A. Introduction

1. **Title:** Operational Reliability Information
2. **Number:** TOP-005-1.2
3. **Purpose:** To ensure reliability entities have the operating data needed to monitor system conditions within their areas.
4. **Applicability**
  - 4.1. Transmission Operators.
  - 4.2. Balancing Authorities.
  - ~~4.3. Reliability Coordinators.~~
  - ~~4.4.3.~~ Purchasing Selling Entities.
5. **Proposed Effective Date:** November 1, 2006

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

~~R1. Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.~~

~~R1.1. Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.~~

R2.R1. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”

R3.R2. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.

**R4.R3.** Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.

### C. Measures

**M1.** Evidence that the ~~Reliability Coordinator~~, Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Monitoring Responsibility

Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.

Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

Periodic Review: Entities will be selected for operational reviews at least every three years. One calendar year without a violation from the time of the violation.

##### 1.3. Data Retention

Not specified.

##### 1.4. Additional Compliance Information

Not specified.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

#### ~~2. Levels of Non-Compliance~~

~~2.1. Level 1: — Each entity responsible for reporting information under Requirements R1 to R5 is providing the requesting entities with the data required, in specified time intervals and format, but there are problems with consistency of delivery identified in the measuring process that need remedy (e.g., the data is not supplied consistently due to equipment malfunctions, or scaling is incorrect).~~

~~2.2. Level 2: N/A.~~

~~2.3. Level 3: N/A.~~

~~1.5. Level 4: — Each entity responsible for reporting information under Requirements R1 to R5 R3 is not providing the requesting entities with data with the specified content, timeliness, or format. The information missing is included in the requesting entity's list of data.~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
<del>R1</del>	<del>The responsible entity failed to provide all of the data requested by its Reliability Coordinator.</del>	<del>N/A</del>	<del>N/A</del>	<del>The responsible entity failed to provide all of the data requested by its Reliability Coordinator.</del>
<del>R1.1</del>	<del>N/A</del>	<del>N/A</del>	<del>N/A</del>	<del>The Reliability Coordinator failed to identify the data necessary to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</del>
<del>R2R1</del>	<del>N/A</del>	<del>N/A</del>	<del>N/A</del>	<del>The ISN data recipient failed to sign the NERC Confidentiality Agreement for “Electric System Reliability Data”.</del>
<del>R3R2</del>	<del>The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.</del>	<del>N/A</del>	<del>N/A</del>	<del>The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.</del>
<del>R4R3</del>	<del>The responsible entity failed to provide any of the data requested by other Balancing Authorities or Transmission Operators.</del>	<del>N/A</del>	<del>N/A</del>	<del>The responsible entity failed to provide all of the data requested by its host Balancing Authority or Transmission Operator.</del>

**E. Regional DifferencesVariances**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>		<u>Removed the Reliability Coordinator from the list of responsible functional entities</u> <u>Deleted R1 and R1.1</u> <u>Modified M1 to omit the reference to the Reliability Coordinator</u> <u>Deleted VSLs for R1 and R1.1</u>	<u>Revised</u>



**Attachment 1-TOP-005-0**

**Electric System Reliability Data**

This Attachment lists the types of data that ~~Reliability Coordinators~~, Balancing Authorities, and Transmission Operators are expected to ~~provide, and are expected to~~ share with ~~each~~ other Balancing Authorities and Transmission Operators.

1. The following information shall be updated at least every ten minutes:
  - 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:
    - 1.1.1 Status.
    - 1.1.2 MW or ampere loadings.
    - 1.1.3 MVA capability.
    - 1.1.4 Transformer tap and phase angle settings.
    - 1.1.5 Key voltages.
  - 1.2. Generator data.
    - 1.2.1 Status.
    - 1.2.2 MW and MVAR capability.
    - 1.2.3 MW and MVAR net output.
    - 1.2.4 Status of automatic voltage control facilities.
  - 1.3. Operating reserve.
    - 1.3.1 MW reserve available within ten minutes.
  - 1.4. Balancing Authority demand.
    - 1.4.1 Instantaneous.
  - 1.5. Interchange.
    - 1.5.1 Instantaneous actual interchange with each Balancing Authority.
    - 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.
    - 1.5.3 Interchange Schedules for the next 24 hours.
  - 1.6. Area Control Error and frequency.
    - 1.6.1 Instantaneous area control error.
    - 1.6.2 Clock hour area control error.
    - 1.6.3 System frequency at one or more locations in the Balancing Authority.
2. Other operating information updated as soon as available.

- 2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.
- 2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.
- 2.3. Forecast peak demand for current day and next day.
- 2.4. Forecast changes in equipment status.
- 2.5. New facilities in place.
- 2.6. New or degraded special protection systems.
- 2.7. Emergency operating procedures in effect.
- 2.8. Severe weather, fire, or earthquake.
- 2.9. Multi-site sabotage.

## A. Introduction

1. **Title:** Monitoring System Conditions

2. **Number:** TOP-006-1~~2~~

~~3.~~ **Purpose:**

3. To ensure critical reliability parameters are monitored in real-time.

4. **Applicability**

4.1. Transmission Operators.

4.2. Balancing Authorities.

4.3. Generator Operators.

4.4. Reliability Coordinators.

5. **Proposed Effective Date:** ~~January 1, 2007~~

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

**R1.** Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.

**R1.1.** Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.

**R1.2.** Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.

**R2.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**R3.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall provide appropriate technical information concerning protective relays to their operating personnel.

**R4.** Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.

**R5.** Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall use monitoring equipment to bring to the attention of operating personnel important

deviations in operating conditions and to indicate, if appropriate, the need for corrective action.

- R6. Each Balancing Authority and Transmission Operator shall use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
- R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.

### C. Measures

- M1. The Generator Operator shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Host Balancing Authority and Transmission Operator of all generation resources available for use. (Requirement 1.1)
- M2. Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, voice recordings, electronic communications, or other equivalent evidence that will be used to confirm that it informed its Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use. (Requirement 1.2)
- M3. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, computer printouts or other equivalent evidence that will be used to confirm that it monitored each of the applicable items listed in Requirement 2.
- M4. Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, printouts, training documents, description documents or other equivalent evidence that will be used to confirm that it has weather forecasts and past load patterns, available to predict the system's near-term load pattern. (Requirement 4)
- M5. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a description of its EMS alarm capability, training documents, or other equivalent evidence that will be used to confirm that important deviations in operating conditions and the need for corrective actions will be brought to the attention of its operators. (Requirement 5)
- M6. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, a list of the frequency monitoring points available to the shift-operators or other equivalent evidence that will be used to confirm that it monitors system frequency. (Requirement 7)

### D. Compliance

#### 1. Compliance Monitoring Process

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organizations shall be responsible for compliance monitoring.

**1.2. Compliance Monitoring and Reset Time Frame**

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

**1.3. Data Retention**

Each Generator Operator shall keep 90 days of historical data (evidence) for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measure 2.

Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have current documents as evidence for Measure 3, 5 and 6.

Each ~~Reliability Coordinator~~, Transmission Operator and Balancing Authority shall have current documents as evidence of compliance to Measure 4.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all supporting compliance data

**1.4. Additional Compliance Information**

None.

Violation Severity Levels for this standard were approved by the BOT on February 28, 2008 and they replace the Levels of Non-compliance.

~~2. Levels of Non-Compliance for Reliability Coordinators:~~

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Not applicable.~~

~~2.3. Level 3: Not applicable.~~

~~2.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.4.1 Does not monitor all of the applicable items listed in Requirement 2.~~

~~2.4.2 Did not have the information specified in R4.~~

~~2.4.3 Did not bring to the attention of its operators, important deviations in operating conditions and the need for corrective actions. (Requirement 5)~~

~~2.4.4 No evidence it monitors system frequency. (Requirement 7)~~

**3. Levels of Non-Compliance for Generator Operators:**

~~3.1. Level 1: Not applicable.~~

~~3.2. Level 2: Not applicable.~~

~~3.3. Level 3: Not applicable.~~

~~3.4. Level 4: Did not inform its Host Balancing Authority and/or the Transmission Operator of all generation resources available for use. (R1.1)~~

**4. Levels of Non-Compliance for Transmission Operators and Balancing Authorities:**

~~4.1. Level 1: Not applicable.~~

~~4.2. Level 2: Not applicable.~~

~~4.3. Level 3: Not applicable.~~

~~4.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~4.4.1 Did not inform the Reliability Coordinator and/or other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use in accordance with R1.2.~~

~~4.4.2 Does not monitor all the applicable items listed in R2.~~

~~4.4.3 Did not have the information specified in R4.~~

~~4.4.4 Does not have monitoring to bring to the attention of operating personnel important deviations in operating conditions and the need for corrective actions as specified in R5.~~

~~4.4.5 No evidence it monitors system frequency. (R7).~~

2. Violation Severity Levels:

Requirement	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The responsible entity failed to know the status of all generation and transmission resources available for use, even though said information was reported by the Generator Operator, Transmission Operator, or Balancing Authority.
R1.1	N/A	N/A	N/A	The Generator Operator failed to inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
R1.2	N/A	N/A	N/A	The responsible entity failed to inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.
R2	N/A	The responsible entity monitors the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, but is not aware of the status of rotating and static reactive resources.	The responsible entity fails to monitor all of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of all rotating and static reactive resources.	The responsible entity fails to monitor any of the applicable transmission line status, real and reactive power flows, voltage, load-tap-changer settings, and status of rotating and static reactive resources.

**Standard TOP-006-1.2— Monitoring System Conditions**

<b>Requirement</b>	<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
R3	The responsible entity failed to provide any of the appropriate technical information concerning protective relays to their operating personnel.	N/A	N/A	The responsible entity failed to provide all of the appropriate technical information concerning protective relays to their operating personnel.
R4	N/A	N/A	The responsible entity has either weather forecasts or past load patterns, available to predict the system's near-term load pattern, but not both.	The responsible entity failed to have both weather forecasts and past load patterns, available to predict the system's near-term load pattern.
R5	N/A	N/A	The responsible entity used monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions, but does not have indication of the need for corrective action.	The responsible entity failed to use monitoring equipment to bring to the attention of operating personnel important deviations in operating conditions.
R6	N/A	N/A	N/A	The responsible entity failed to use sufficient metering of suitable range, accuracy and sampling rate (if applicable) to ensure accurate and timely monitoring of operating conditions under both normal and emergency situations.
R7	N/A	N/A	N/A	The responsible entity failed to monitor system frequency.



**E. Regional DifferencesVariances**

None identified.

**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
<u>2</u>		<u>Modified R4</u> <u>Modified M4</u> <u>Modified Data Retention for M4</u> <u>Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)</u>	<u>Revised</u>

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#### **Anticipated Date**

June 16–July 15, 2008  
July 16–July 25, 2008  
August 6–15, 2008  
To be determined  
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### **Definitions of Terms Used in Standard**

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**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation. (That analysis may be performed either a day ahead or as much as 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.

## **A. Introduction**

- 1. Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
- 2. Number:** IRO-008-1
- 3. Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
- 4. Applicability**
  - 4.1.** Reliability Coordinator.
- 5. Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## **B. Requirements**

- R1.** Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2.** Each Reliability Coordinator shall perform a Real-Time Assessment at least once every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3.** When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

## **C. Measures**

- M1.** The Reliability Coordinator shall have, and make available upon request, the results of its Operational Planning Analyses.
- M2.** The Reliability Coordinator shall have, and make available upon request, evidence to show it conducted a Real-Time Assessment at least once every 30 minutes. This evidence could include, but is not limited to, dated computer log showing times the assessment was conducted, dated checklists, or other evidence.

- M3.** The Reliability Coordinator shall have and make available upon request, evidence to confirm that it shared the results of its Operational Planning Analyses or Real-Time Assessments with those entities expected to take actions based on that information. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated transcripts of voice records, dated facsimiles, or other evidence.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

#### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

The Reliability Coordinator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

The Reliability Coordinator shall retain evidence for Requirement R1, Measure M1 and Requirement R2, Measure M2 for a rolling 30 days. The Reliability Coordinator shall keep evidence for Requirement R3, Measure M3 for a rolling three months.

#### **1.5. Additional Compliance Information**

None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except one of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except two of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except three of 30 days. (R1)	Missed performing an Operational Planning Analysis that covers all aspects of the requirement for four or more of 30 days. (R1)
<b>R2</b>	For any sample 24 hour period within the 30 day retention period, a Real-time Assessment was not conducted for one 30-minute period. within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for two 30-minute periods within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for three 30-minute periods within that 24-hour period (R2)	For any sample 24 hour period within the 30 day retention period, Real-time Assessments were not conducted for more than three 30-minute periods within that 24-hour period (R2)
<b>R3</b>		Shared the results with some but not all of the entities that were required to take action (R3)		Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

**E. Regional Variances**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

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None.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability:**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2. For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3. When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4. When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

- R5.** If unanimity cannot be reached on the value for an IROL or its  $T_v$ , each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

### **C. Measures**

- M1.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement R1 and Requirement R2. This evidence shall include a list of any IROLs (and each associated  $T_v$ ) identified in advance, along with one or more dated Operating Processes, Procedures, or Plans that that will be used.
- M2.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it acted or directed others to act in accordance with Requirement R3 and Requirement R4. This evidence could include, but is not limited to, Operating Processes, Procedures, or Plans from Requirement R1, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.
- M3.** For a situation where Reliability Coordinators disagree on the value of an IROL or its  $T_v$  the Reliability Coordinator shall have, and make available upon request, evidence to confirm that it used the most conservative of the values under consideration, without delay. Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence. (R5)

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

##### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

Exception Reporting

**1.4. Data Retention**

The Reliability Coordinator, shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain evidence of Requirement R1, Requirement R2, and Measure M1, for a rolling 12 months.

The Reliability Coordinator shall retain evidence of Requirement R3, Requirement R4, Requirement R5, Measure M2, and Measure M3 for a rolling 12 months.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records, and all IROL Violation Reports submitted since the last audit.

**1.5. Additional Compliance Information**

**Exception Reporting:** For each instance of exceeding an IROL for time greater than IROL  $T_v$ , the Reliability Coordinator shall submit an IROL Violation Report to its Compliance Enforcement Authority within 30 days of the initiation of the event.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
<b>R2</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL's T <sub>v</sub> . (R2)
<b>R3</b>				An assessment of actual or expected system conditions predicted that an IROL in the Reliability Coordinator's Area would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
<b>R4</b>			Actual system conditions	Actual system conditions

**Standard IRO-009-1 — Reliability Coordinator Actions to Operate Within IROLs**

Requirement	Lower	Moderate	High	Severe
			<p>showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL <math>T_v</math>. (R4)</p>	<p>showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and that IROL was not resolved within the IROL's <math>T_v</math>. (R4)</p>
<b>R5</b>	Not applicable.	Not applicable.	Not applicable.	<p>There was a disagreement on the value of the IROL or its <math>T_v</math> and the most conservative limit under consideration was not used. (R5)</p>

**E. Regional Variances**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

Version	Date	Action	Change Tracking

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None.

## A. Introduction

1. **Title:**           **Reliability Coordinator Data Specification and Collection**
2. **Number:**       IRO-010-1
3. **Purpose:**        To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:**

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In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following: (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
  - R1.1. List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
  - R1.2. Mutually agreeable format.
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

- R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.
- R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
- R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

### **C. Measures**

- M1.** The Reliability Coordinator shall have, and make available upon request, a documented data specification that contains all elements identified in Requirement R1.
- M2.** The Reliability Coordinator shall have, and make available upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. This evidence could include, but is not limited to, dated paper or electronic notice used to distribute its data specification showing recipient, and data or information requested or other equivalent evidence. (R2)
- M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and make available upon request, evidence to confirm that it provided data and information, as specified in Requirement R3. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated computer printouts, dated SCADA data, or other equivalent evidence.

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators and other functional entities that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

##### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner, shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain its current, in force data specification for Requirement R1, Measure M1.

The Reliability Coordinator shall keep evidence of its most recent distribution of its data specification and evidence to show the data supplied in response to that specification for Requirement R2, Measure M2 and Requirement R3 Measure M3.

For data that is requested in accordance with Requirement R2, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Requirement R3 Measure M3 for the Reliability Coordinator's most recent data specification for a rolling 90 calendar days.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

#### **1.5. Additional Compliance Information**

**1.5.1** None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	Data specification is complete with the following exception: Missing the mutually agreeable format. (R1.2)	Data specification is complete with the following exception – no process for data provision when automated Real-Time system operating data is unavailable. (R1.4)	Data specification incomplete (missing either the list of required data (R1.1), or the timeframe for providing data. (R1.3)	No data specification (R1)
<b>R2</b>	Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status.	Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Distributed its data specification to greater than or equal to 75% - but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)	Data specification distributed to less than 75% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)
<b>R3</b>	Provided greater than or equal to 95% but less than 100% of the data and information as specified. (R3)	Provided greater than or equal to 85% but less than 95% of the data and information as specified. (R3)	Provided greater than or equal to 75% but less than 85% of the data and information as specified. (R3)	Provided less than 75% of the data and information as specified. (R3)

**E. Regional Variances**

None

**F. Associated Documents**

None

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>

## **Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### **Development Steps Completed:**

1. SAC approves SAR for posting (March 10, 2002).
2. Drafting team posts draft SAR for comment (April 2–May 3, 2002) (August 20–September 29, 2002).
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5. Drafting team posts drafts for comment (February 18–April 2, 2003) (July 1–August 29, 2003).
6. Balloted December 18, 2003–January 6, 2004.
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8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
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10. Drafting team posts revised standards and implementation plan for comment (March 26 – April 25, 2008).

### **Description of Current Draft:**

This is the final draft of the proposed standard, posted for pre-ballot review.

### **Future Development Plan:**

#### **Anticipated Actions**

#### **Anticipated Date**

- |   |                       |
|---|-----------------------|
| 1. Post for 30-day pre-ballot period.         | June 16–July 15, 2008 |
| 2. Conduct initial ballot of standards.       | July 16–July 25, 2008 |
| 3. Conduct recirculation ballot of standards. | August 6–15, 2008     |
| 4. Submit to BOT for adoption.                | To be determined      |
| 5. File for regulatory approvals.             | To be determined      |

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Operational Planning Analysis:** An analysis of the expected system conditions for the next day's operation. (That analysis may be performed either a day ahead or as much ~~and up as to~~ 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.).

**Real-time Assessment:** An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data.



## A. Introduction

1. **Title:** Reliability Coordinator Operational Analyses and Real-time Assessments
2. **Number:** IRO-008-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring that the Bulk Electric System is assessed during the operations horizon.
4. **Applicability**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning*)
- R2. Each Reliability Coordinator shall perform a Real-Time Assessment at least **once** every 30 minutes to determine if its Wide Area is exceeding any IROLs or is expected to exceed any IROLs. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R3. When a Reliability Coordinator determines that the results of an -Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions. (*Violation Risk Factor: Medium*) (*Time Horizon: Real-time Operations or Same Day Operations*)

## C. Measures

- M1. The Reliability Coordinator shall have, and **provide-make available** upon request, the results of its Operational Planning Analyses.
- M2. The Reliability Coordinator shall have, and **provide-make available** upon request, evidence to show it conducted a Real-Time Assessment at least once every 30 minutes. This evidence could include, but is not limited to, dated computer log showing times the assessment was conducted, dated checklists, or other evidence.

- M3. The Reliability Coordinator shall have and make available provide upon request, evidence to confirm that it shared the results of its Operational Planning Analyses or Real-Time Assessments with those entities expected to take actions based on that information. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated transcripts of voice records, dated facsimiles, or other evidence.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

#### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

The Reliability Coordinator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

The Reliability Coordinator shall retain evidence for Requirement R1, Measure M1 and Requirement R2, Measure M2 for a rolling 30 days. The Reliability Coordinator shall keep evidence for Requirement R3, Measure M3 for a rolling three months.

#### **1.5. Additional Compliance Information**

None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except one of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except two of 30 days. (R1)	Performed an Operational Planning Analysis that covers all aspects of the requirement for all except three of 30 days. (R1)	Missed performing an Operational Planning Analysis that covers all aspects of the requirement for four or more of 30 days. (R1)
<b>R2</b>	<u>For any sample 24 hour period within the 30 day retention period.</u> Real-time Assessment was not conducted for one 30-minute period within <del>a</del> <u>that</u> 24-hour period (R2)	<u>For any sample 24 hour period within the 30 day retention period.</u> Real-time Assessments were not conducted for two 30-minute periods within <del>a</del> <u>that</u> 24-hour period (R2)	<u>For any sample 24 hour period within the 30 day retention period.</u> Real-time Assessments were not conducted for three 30-minute periods within <del>a</del> <u>that</u> 24-hour period (R2)	<u>For any sample 24 hour period within the 30 day retention period.</u> Real-time Assessments were not conducted for more than three 30-minute periods within <del>a</del> <u>that</u> 24-hour period (R2)
<b>R3</b>		Shared the results with some but not all of the entities that were required to take action (R3)		Did not share the results of its analyses or assessments with any of the entities that were required to take action (R3).

E. Regional ~~Differences~~ Variations

None

F. Associated Documents

None

Version History

Version	Date	Action	Change Tracking

## Standard Development Roadmap

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6. Balloted December 18, 2003–January 6, 2004.
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8. Informational posting to allow the Determine Facility Ratings, System Operating Limits and Transfer Capabilities standards a chance to be finalized (November 2004 through October 2006).
9. Drafting team posts drafts and implementation plan for comment (January 2–February 15, 2007)
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### Description of Current Draft:

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### Future Development Plan:

#### Anticipated Actions

#### Anticipated Date

- |   |                       |
|---|-----------------------|
| 1. Post for 30-day pre-ballot period.         | June 16–July 15, 2008 |
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| 4. Submit to BOT for adoption.                | To be determined      |
| 5. File for regulatory approvals.             | To be determined      |

### Definitions of Terms Used in Standard

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None.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability:**
  - 4.1. Reliability Coordinator.
  - 4.2. ~~The IROLs covered in this standard are limited to those associated with contingencies studied under FAC-011 and FAC-014.~~
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. For ~~all each IROLs~~ IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies ~~identified~~ one or more days prior to the current day, ~~each the~~ Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2. For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator ~~that is identified~~ identifies one or more days prior to the current day, ~~each the~~ Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3. When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

- R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R5.** If unanimity cannot be reached on the value for an IROL or its  $T_v$ , each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

### C. Measures

- M1.** Each Reliability Coordinator shall have, and ~~provide~~ make available upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement R1 and Requirement R2. This evidence shall include a list of any IROLs (and each associated  $T_v$ ) identified in advance, along with one or more dated Operating Processes, Procedures, or Plans that that will be used.
- M2.** Each Reliability Coordinator shall have, and make available~~provide~~ upon request, evidence to confirm that it acted or directed others to act in accordance with Requirement R3 and Requirement R4. This evidence could include, but is not limited to, Operating Processes, Procedures, or Plans from Requirement R1, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.
- M3.** For a situation where Reliability Coordinators disagree on the value of an IROL or its  $T_v$  the Reliability Coordinator shall have, and make available ~~provide~~ upon request, evidence to confirm that it used the most conservative of the values under consideration, without delay. Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence. (R5)

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Enforcement Authority

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

##### 1.3. Compliance Monitoring and Enforcement Processes

Compliance Audits

Self-Certifications



Spot Checking  
Compliance Violation Investigations  
Self-Reporting  
Complaints  
Exception Reporting

#### **1.4. Data Retention**

The Reliability Coordinator, shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain evidence of Requirement R1, Requirement R2, and Measure M1, for a rolling 12 months.

The Reliability Coordinator shall retain evidence of Requirement R3, Requirement R4, Requirement R5, Measure M2, and Measure M3 for a rolling 12 months.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records, and all IROL Violation Reports submitted since the last audit.

#### **1.5. Additional Compliance Information**

**Exception Reporting:** For each instance of exceeding an IROL for time greater than IROL  $T_v$ , the Reliability Coordinator shall submit an IROL Violation Report to its Compliance Enforcement Authority within 30 days of the initiation of the event.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
R1				An IROL <u>in its Reliability Coordinator Area</u> was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
R2				An IROL <u>in its Reliability Coordinator Area</u> was identified one or more days in advance <u>and the Reliability Coordinator</u> does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL’s T <sub>v</sub> . (R2)
R3			<del>An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but the Operating Processes, Procedures, or Plans that were implemented did not prevent exceeding the IROL. (R3)</del>	An assessment of actual or expected system conditions predicted that an IROL <u>in the Reliability Coordinator’s Area</u> would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
R4			Actual system conditions	<del>Actual system conditions</del>

Requirement	Lower	Moderate	High	Severe
			<p>showed that there was an instance of exceeding an IROL <u>in its Reliability Coordinator Area</u>, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL <math>T_{v_c}</math> (R4)</p>	<p><del>showed that there was an instance of exceeding an IROL, and a delay before acting or directing others to act resulted in a failure to mitigate the magnitude and duration of the instance of exceeding that IROL within <math>T_{v_c}</math> (R4)</del></p> <p><b>OR</b></p> <p>Actual system conditions showed that there was an instance of exceeding an IROL <u>in its Reliability Coordinator Area</u>, and that IROL was not resolved within the IROL's <math>T_{v_c}</math> (R4)</p>
R5	Not applicable.	Not applicable.	Not applicable.	<p>There was a disagreement on the <u>value of the IROL</u> or its <math>T_v</math> and the most conservative limit under consideration was not used. (R5)</p>

**E. Regional Variances**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

Version	Date	Action	Change Tracking

## Standard Development Roadmap

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#### Anticipated Actions

1. Post for 30-day pre-ballot period.
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#### Anticipated Date

June 16–July 15, 2008  
July 16–July 25, 2008  
August 6–15, 2008  
To be determined  
To be determined

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None.

## A. Introduction

1. **Title:** Reliability Coordinator Data Specification and Collection
2. **Number:** IRO-010-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.
4. **Applicability**
  - 4.1. Reliability Coordinator.
  - 4.2. Balancing Authority.
  - 4.3. Generator Owner.
  - 4.4. Generator Operator.
  - 4.5. Interchange Authority.
  - 4.6. Load-Serving Entity.
  - 4.7. Transmission Operator.
  - 4.8. Transmission Owner.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. The Reliability Coordinator shall have a documented ~~data~~-specification for data and information to build and maintain models to support Real-Time ~~time~~ Monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following: (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)
  - R1.1. List of required data and information: needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
  - R1.2. Mutually agreeable format.
  - R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

**R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

**R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. (*Violation Risk Factor: Low*) (*Time Horizon: Operations Planning*)

**R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. ~~The data and information is limited to data needed by the Reliability Coordinator to support Real Time Monitoring, Operational Planning Analyses, and Real Time Assessments.~~ (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning; Same-day Operations; Real-time Operations*)

### C. Measures

**M1.** The Reliability Coordinator shall have, and ~~provide~~ make available upon request, a documented data specification that contains all elements identified in Requirement R1.

**M2.** The Reliability Coordinator shall have, and make available~~provide~~ upon request, evidence that it distributed its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. This evidence could include, but is not limited to, dated paper or electronic notice used to distribute its data specification showing recipient, and data or information requested or other equivalent evidence. (R2)

**M3.** The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall each have, and make available~~provide~~ upon request, evidence to confirm that it provided data and information, as specified in Requirement R3. This evidence could include, but is not limited to, dated operator logs, dated voice recordings, dated computer printouts, dated SCADA data, or other equivalent evidence.

### D. Compliance

#### 1. Compliance Monitoring Process

##### 1.1. Compliance Enforcement Authority

For Reliability Coordinators and other functional entities that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### 1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

##### 1.3. Compliance Monitoring and Enforcement Processes

Compliance Audits



Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

The Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner, shall each keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain its current, in force data specification for Requirement R1, Measure M1.

The Reliability Coordinator shall keep evidence of its most recent distribution of its data specification and evidence to show the data supplied in response to that specification -for Requirement R2, Measure M2 and Requirement R3 Measure M3.

For data that is requested ~~in advance of real time~~ in accordance with Requirement R2, the Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall keep evidence used to show compliance with Requirement R3 Measure M3 for the Reliability Coordinator's most recent data specification for a rolling 90 calendar days.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

#### **1.5. Additional Compliance Information**

**1.5.1** None.

2. Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
<b>R1</b>	<p><del>Data specification is complete with the following exception—no process for data provision when automated Real-Time system operating data is unavailable. (R1)</del></p> <p><u>Data specification is complete with the following exception:</u> <u>Missing the mutually agreeable format. (R1.2)</u></p>	<p><del>Data specification is complete with the following exception:</del></p> <p><del>Missing the mutually agreeable format (R1)</del></p> <p><u>Data specification is complete with the following exception – no process for data provision when automated Real-Time system operating data is unavailable. (R1.4)</u></p>	<p>Data specification incomplete (missing either the list of required data <u>(R1.1)</u>, or the timeframe for providing data, <u>(R1.3)</u></p>	<p>No data specification (R1)</p>
<b>R2</b>	<p>Distributed its data specification to greater than or equal to 95% but less than 100% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status.</p>	<p>Distributed its data specification to greater than or equal to 85% but less than 95% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)</p>	<p>Distributed its data specification to greater than or equal to 75% - but less than 85% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)</p>	<p>Data specification distributed to less than 75% of the entities that have Facilities monitored by the Reliability Coordinator and the entities that provide the Reliability Coordinator with Facility status. (R2)</p>
<b>R3</b>	<p>Provided greater than or equal to 95% but less than 100% of the data and information as specified. (R3)</p>	<p>Provided greater than or equal to 85% but less than 95% of the data and information as specified. (R3)</p>	<p>Provided greater than or equal to 75% but less than 85% of the data and information as specified. (R3)</p>	<p>Provided less than 75% of the data and information as specified. (R3)</p>

**E. Regional Variances**

None

**F. Associated Documents**

None

**Version History**

Version	Date	Action	Change Tracking



# Standards Announcement

## Ballot Pools and Pre-ballot Windows Open

### June 20–July 21, 2008

Now available at: <https://standards.nerc.net/BallotPool.aspx>

#### Ballot Pools and Pre-ballot Windows for IRO-008-1, IRO-009-1, and IRO-010-1

The following [Interconnection Reliability Operating Limit](#) (IROL) standards, implementation plan, and a report identifying how the drafting team addressed relevant directives from FERC Order 693 are posted for a 30-day, pre-ballot review starting **June 20, 2008**:

- IRO-008-1 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009-1 — Reliability Coordinator Actions to Operate within IROLs
- IRO-010-1 — Reliability Coordinator Data Specification and Collection

These standards require the Reliability Coordinator to take actions to keep the bulk electric system operating within IROLs.

There are three separate [ballot pools](#) for this set of IROL standards — and any member of the Registered Ballot Body may join as many or as few of the ballot pools as desired — a member wanting to ballot all three of the IROL standards must join all three of the ballot pools. The ballot for each of the IROL standards includes the retirement or revision of associated requirements from some already approved standards as identified in the table below. The IROL [implementation plan](#) contains the justification for the recommended retirements and revisions.

Three Ballots for IROL Standards		
Ballot Pool (List Server)	Ballot for New Standard	Includes Modifications to Associated Approved Standards
IROL Standard — IRO-008_in <a href="mailto:bp-IRO-008_in@nerc.com">bp-IRO-008_in@nerc.com</a>	IRO-008	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R1 and R2</li> </ul>
IROL Standard — IRO-009_in <a href="mailto:bp-IRO-009_in@nerc.com">bp-IRO-009_in@nerc.com</a>	IRO-009	EOP-001-0 — Emergency Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>
		IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R3 and R6</li> </ul>
		IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R3, R5, R16, R17;</li> <li>▪ Modify R9, R13 and R14</li> </ul>
IROL Standard — IRO-010_in <a href="mailto:bp-IRO-010_in@nerc.com">bp-IRO-010_in@nerc.com</a>	IRO-010	IRO-002-1 — RC – Facilities <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>
		IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R4, R5</li> </ul>
		IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>

		TOP-003-0 — Planned Outage Coordination <ul style="list-style-type: none"> <li>▪ Modify R1.2</li> </ul>
		TOP-005-1 — Operational Reliability Information <ul style="list-style-type: none"> <li>▪ Retire R1, R1.1</li> </ul>
		TOP-006-1 — Monitoring System Conditions <ul style="list-style-type: none"> <li>▪ Modify R4</li> </ul>

During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.”<sup>1</sup> (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The ballot pools will remain open up until **8 a.m. (EDT), Monday, July 21, 2008**.

<sup>1</sup>For assistance in using a list server, contact Barbara Bogenrief at 609-452-8060.

**Now available at: <https://standards.nerc.net/BallotPool.aspx>**

### Five Pre-ballot Windows and Ballot Pools for Project 2006-07 — ATC/TTC and CBM/TRM

The following standards related to the determination of [Available Transfer Capability \(ATC\)](#), Total Transfer Capability (TTC), and Transmission Reliability Margin (TRM) and associated [implementation plans](#), are posted for a 30-day, pre-ballot review beginning **June 20, 2008**:

- MOD-001 — Available Transfer Capability
- MOD-008 — Transmission Reliability Margin
- MOD-028 — Area Interchange Methodology
- MOD-029 — Rated System Path Methodology
- MOD-030 — Flowgate Methodology

This set of [ATC-related standards](#) requires consistency in the calculation and documentation of TRM, TTC, AFC, and ATC.

Note that there is another standard in this set, MOD-004-1 — Capacity Benefit Margin (CBM), that is still undergoing revisions and is not ready for ballot. The Standards Committee considered whether to wait until the revisions to MOD-004-1 were complete before moving the entire set of six standards forward to ballot. The committee concluded that the interests of NERC and its stakeholders are best served by proceeding with the ballot for the five standards that are ready. Since there are approved standards in place that address CBM, the five new ATC-related standards can be implemented effectively without the new MOD-004-1.

There are five separate [ballot pools](#) for this set of ATC standards — and any member of the Registered Ballot Body may join as many or as few of the ballot pools as desired — a member wanting to ballot all five of the ATC-related standards must join all five of the ballot pools. (Note: these are **new ballot pools** — the ballot pools used to conduct the ATC-related ballots that took place earlier this year have been retired.)

The ballot for each of the standards includes the retirement of associated approved standards as identified in the table below. The [implementation plans](#) contain the justification for the recommended retirements.

Five Ballots for ATC Standards		
Standard	Ballot Pool (List Server)	Ballot Includes Retirement of Associated Approved Standards
MOD-001-1 Available Transfer Capability	ATC et al Standards — MOD-001 <a href="mailto:bp-MOD-001_R1_in@nerc.com">bp-MOD-001_R1_in@nerc.com</a>	MOD-001-0 FAC-012-1, FAC-013-1

MOD-008-1 Transmission Reliability Margin	ATC et al Standard — MOD-008 <a href="mailto:bp-MOD-008_R1_in@nerc.com">bp-MOD-008_R1_in@nerc.com</a>	MOD-008-0, MOD-009-0
MOD-028-1 Area Interchange Methodology	ATC et al Standard — MOD-028 <a href="mailto:bp-MOD-028_R1_in@nerc.com">bp-MOD-028_R1_in@nerc.com</a>	FAC-012-1, FAC-013-1
MOD-029-1 Rated System Path Methodology	ATC et al Standard — MOD-029 <a href="mailto:bp-MOD-029_R1_in@nerc.com">bp-MOD-029_R1_in@nerc.com</a>	FAC-012-1, FAC-013-1
MOD-030 Flowgate Methodology	ATC et al Standard — MOD-030 <a href="mailto:bp-MOD-030_R1_in@nerc.com">bp-MOD-030_R1_in@nerc.com</a>	FAC-012-1, FAC-013-1

During the 30-day, pre-ballot window, members of a ballot pool may communicate with one another by using their “ballot pool list server.”<sup>1</sup> (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The ballot pools will remain open up until **8 a.m. (EDT), Monday, July 21, 2008.**

<sup>1</sup>For assistance in using a list server, contact Barbara Bogenrief at 609-452-8060.

### Standards Development Process

The [Reliability Standards Development Procedure Manual](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance, please contact Maureen Long,  
Standards Process Manager, at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or at (813) 468-5998.*

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The NERC logo consists of the letters "NERC" in a bold, black, sans-serif font. Below the letters is a horizontal blue bar with a white gradient.

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards (IRO-008–IRO-10)

## Introduction

This implementation plan is associated with the following Interconnection Reliability Operating Limit (IROL) standards:

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

These three standards are “new” standards, not revisions to Version 0 standards. These standards do, however address some of the same topics as addressed in some of the Version 0 standards.

The ballot for each of the IROL standards includes the retirement of associated requirements from some already approved standards and effective dates identified in this implementation plan.

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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## **Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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### **Prerequisite Approvals**

There are no SARs or standards under development that need to be effective before this set of standards becomes effective:

- IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection

### **Conforming Changes to Requirements in Already Approved Standards**

Many elements contained in the set of proposed “Operate within IROL Standards” address the same or similar performance objectives as requirements in already approved standards. To eliminate duplication and minimize confusion, the IROL SDT recommends that the retirement or revision of the following requirements in Version 0 Standards coincident with the implementation of the proposed standards. Justification for these revisions and retirements is provided in the tables on the following pages.

- EOP-001-0 — Emergency Operations Planning
  - Retire R2
- IRO-002-1 — Reliability Coordination – Facilities
  - Retire R2
- IRO-004-1 — Reliability Coordination – Operations Planning
  - Retire R1 through R6
- IRO-005-2 — Reliability Coordination – Current Day Operations
  - Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17
- TOP-003-0 — Planned Outage Coordination
  - Modify R1.2
- TOP-005-1 — Operational Reliability Information
  - Retire R1 and R1.1
  - Modify Attachment 1
- TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control
  - Modify R4



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Revisions or Retirements to Already Approved Standards**

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

<p align="center"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p align="center"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>EOP-001-0</b></p> <p><b>R2.</b> The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.</p>	<p><b>IRO-009-1 R1.</b></p> <p><b>R1.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.</li> <li>▪ The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's <math>T_v</math>, which can be shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-002-1</b></p> <p><b>R2.</b> Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-002-1 R2 should be retired.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed requirements are more explicit than the associated requirement in IRO-002-0.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p><b>R2.</b> Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p>	<p><b>IRO-008-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-004-1 R1 and R2 should be retired.</li> <li>▪ IRO-008 R1 requires the Reliability Coordinator to look at its 'Wide Area' rather than its 'Reliability Coordinator Area' in conducting its Operational Planning Analyses.</li> <li>▪ IRO-004-1 R2 is not measurable and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008 becomes effective.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-004-1</b></p> <p><b>R3.</b> Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.</p> <p><b>R6.</b> If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's <math>T_v</math>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.</li> <li>▪ IRO-009-1 R1 and R2 require the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>▪ IRO-009-1 R3 includes language that is more explicit than the language in IRO-004-1 R6: ‘results of these studies’ is not as specific as ‘when an assessment of actual or expected system conditions’.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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<b>Already Approved Standard</b> (text in blue is recommended for retirement)	<b>Proposed Replacement Requirement(s)</b>
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**IRO-004-1**

**R4.** Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.

**R5.** Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.

**IRO-005-2**

**R2.** Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.

**IRO-010-1**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

**R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**R1.2.** Mutually agreeable format.

**R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

**R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

**R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.

**R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**IRO-008-1**

**R3.** When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions.



## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-008-1 and IRO-010-1 become effective, IRO-004-1 R4 and R5 should be retired.
- IRO-010-1 is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share. The periodicity for collecting the data is addressed in IRO-010-1 R1.3. Only a fraction of the reliability-related data needed by the Reliability Coordinator and shared by the Reliability Coordinator is addressed in IRO-004-1 R4. There are two different requirements in IRO-004-1 R5 – to share data with other Reliability Coordinators and for the Reliability Coordinator to share data with entities in its Reliability Coordinator Area. While the first part of IRO-004-1 R5 is replaced by the R3 in IRO-010-1 (requires Reliability Coordinators to provide data to other Reliability Coordinators), the second part of the requirement is replaced by IRO-008-1 R3 (requires the Reliability Coordinator to share the results of its analyses with entities within its Reliability Coordinator Area if those analyses meet certain conditions).
- When IRO-010-1 becomes effective, IRO-005-2 R2 should be retired. The e-tag system replaced the need for this requirement. In addition, if the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b>  <b>R3.</b> As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.</p> <p><b>R5.</b> Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's <math>T_v</math>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's <math>T_v</math>.</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-009-1 becomes effective, IRO-005-2 R3, and R5 should be retired.
- IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a  $T_v$  that is much shorter than 30 minutes.
- IRO-005 R5 can lead the Compliance Enforcement Authority to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p align="center"><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p align="center"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b></p> <p><b>R9.</b> The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del>, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's T<sub>v</sub>.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R9 should be modified.</li> <li>▪ IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b>  <b>R13.</b> Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's <math>T_v</math>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's <math>T_v</math>.</p> <p><b>R5.</b> If unanimity cannot be reached on the value for an IROL or its <math>T_v</math>, all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration.</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-009-1 becomes effective, IRO-005-2 R13 should be revised.
- IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.
- The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-009-1 R5 has a similar requirement that is applicable totally to the Reliability Coordinator and focused solely on IROLs.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b></p> <p>(text in blue is recommended for deletion or retirement – the red text is an addition to the text that already exists in the requirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b>  <b>R14.</b> Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view. The Transmission Service Providers shall respect <del>these SOLs or</del> and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p><b>R16.</b> Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p><b>R17.</b> When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>	<p><b>IRO-009-1</b></p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's <math>T_v</math>.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.</li> <li>▪ IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROLs – R14 implies that the Transmission Service Provider may respect ‘either’ SOLs or IROLs.</li> <li>▪ IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>▪ IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a <math>T_v</math> that is much shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-003-0</b>  <b>R1.</b> Generator Operators and Transmission Operators shall provide planned outage information.</p> <p style="padding-left: 20px;"><b>R1.1</b> Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p style="padding-left: 20px;"><b>R1.2</b> Each Transmission Operator shall provide outage information daily to <del>its Reliability Coordinator, and to</del> affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. <del>The Reliability Coordinator shall establish the outage reporting requirements.</del></p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:</p> <p style="padding-left: 20px;"><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p> <p style="padding-left: 20px;"><b>R1.2.</b> Mutually agreeable format.</p> <p style="padding-left: 20px;"><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</p> <p style="padding-left: 20px;"><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-003-0 R1.2 should be modified. The certification process should include a requirement for the Reliability Coordinator to have a procedure for coordinating outages that includes identification of reliability-related lead times.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to provide data to other Reliability Coordinators in accordance with the data specifications it has received from those other Reliability Coordinators. Daily outage data is one of the types of data that is expected to be identified on the Reliability Coordinator's documented data specification since this is data needed to maintain real-time models.</li> </ul>	



**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-005-1</b>  <b>R1.</b> Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</p> <p style="padding-left: 40px;"><b>R1.1</b> Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-005-1 R1 and R1.1 should be retired.</li> <li>▪ Under IRO-010-1 each Reliability Coordinator must document what data and information it needs and entities must provide that data. The data needed by the Reliability Coordinator is needed for more than just reliability assessments – some of the data is used for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in R1 of TOP-005-1) have data and information needed by the Reliability Coordinator.</li> </ul>	

<p style="text-align: center;"><b>Already Approved Standard</b></p>	<p style="text-align: center;"><b>Proposed Replacement</b></p>
<p><b>TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data</b></p> <p>This Attachment lists the types of data that Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with other Balancing Authorities and Transmission Operators.</p> <ol style="list-style-type: none"> <li>1. The following information shall be updated at least every ten minutes:               <ol style="list-style-type: none"> <li>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:                   <ol style="list-style-type: none"> <li>1.1.1 Status.</li> <li>1.1.2 MW or ampere loadings.</li> <li>1.1.3 MVA capability.</li> <li>1.1.4 Transformer tap and phase angle settings.</li> <li>1.1.5 Key voltages.</li> </ol> </li> <li>1.2. Generator data.                   <ol style="list-style-type: none"> <li>1.2.1 Status.</li> <li>1.2.2 MW and MVAR capability.</li> <li>1.2.3 MW and MVAR net output.</li> <li>1.2.4 Status of automatic voltage control facilities.</li> </ol> </li> <li>1.3. Operating reserve.                   <ol style="list-style-type: none"> <li>1.3.1 MW reserve available within ten minutes.</li> </ol> </li> <li>1.4. Balancing Authority demand.                   <ol style="list-style-type: none"> <li>1.4.1 Instantaneous.</li> </ol> </li> <li>1.5. Interchange.                   <ol style="list-style-type: none"> <li>1.5.1 Instantaneous actual interchange with each Balancing Authority.</li> <li>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</li> <li>1.5.3 Interchange Schedules for the next 24 hours.</li> </ol> </li> <li>1.6. Area Control Error and frequency.                   <ol style="list-style-type: none"> <li>1.6.1 Instantaneous area control error.</li> <li>1.6.2 Clock hour area control error.</li> <li>1.6.3 System frequency at one or more locations in the Balancing Authority.</li> </ol> </li> </ol> </li> <li>2. Other operating information updated as soon as available.               <ol style="list-style-type: none"> <li>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</li> <li>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</li> <li>2.3. Forecast peak demand for current day and next day.</li> <li>2.4. Forecast changes in equipment status.</li> <li>2.5. New facilities in place.</li> <li>2.6. New or degraded special protection systems.</li> <li>2.7. Emergency operating procedures in effect.</li> <li>2.8. Severe weather, fire, or earthquake.</li> <li>2.9. Multi-site sabotage.</li> </ol> </li> </ol>	<p><b>IRO-010-1</b></p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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**Notes:**

- When IRO-010-1 becomes effective, 'Attachment 1-TOP-005-0 Electric System Reliability Data' should be modified to omit the reference to the Reliability Coordinator. The Reliability Coordinator's requirement to share data with other Reliability Coordinators is addressed in IRO-010-1 R3.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-006-1</b>  <b>R4.</b> Each <del>Reliability Coordinator</del>, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system’s near-term load pattern.</p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:  <b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.  <b>R1.2.</b> Mutually agreeable format.  <b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).  <b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.  <b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.  <b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-006-1 R4 should be modified.</li> <li>▪ The information identified in TOP-006-1 R4 is not inclusive, and is addressed more globally for the Reliability Coordinator in IRO-010-1 R1 and R3.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

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**Functions that Must Comply with the Requirements in the Standards**

Standard	Functions that Must Comply With the Requirements							
	Reliability Coordinator	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
IRO-008-1 Analyses & Assessments	X							
IRO-009-1 Actions to Operate within IROLs	X							
IRO-010-1 Data Specification & Collection	X	X	X	X	X	X	X	X

**Effective Dates**

In those jurisdictions where no regulatory approval is required, the standards shall all become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standards shall all become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

# NERC

NORTH AMERICAN ELECTRIC  
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## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards (IRO-008–IRO-10)

### Introduction

This implementation plan is associated with the following Interconnection Reliability Operating Limit (IROL) standards:

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

These three standards are “new” standards, not revisions to Version 0 standards. These standards do, however address some of the same topics as addressed in some of the Version 0 standards.

The ballot for each of the IROL standards includes the retirement of associated requirements from some already approved standards and effective dates identified in this implementation plan.

# Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Prerequisite Approvals

There are no SARs or standards under development that need to be effective before this set of standards becomes effective:

- IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009 — Reliability Coordinator Actions to Operate Within IROLs
- IRO-010 — Reliability Coordinator Data Specification and Collection

### Conforming Changes to Requirements in Already Approved Standards

Many elements contained in the set of proposed “Operate within IROL Standards” address the same or similar performance objectives as requirements in already approved standards. To eliminate duplication and minimize confusion, the IROL SDT recommends that the retirement or revision of the following requirements in Version 0 Standards coincident with the implementation of the proposed standards. Justification for these revisions and retirements is provided in the tables on the following pages.

EOP-001-0 — Emergency Operations Planning

- Retire R2

IRO-002-1 — Reliability Coordination – Facilities

- Retire R2

IRO-004-1 — Reliability Coordination – Operations Planning

- Retire ~~entire standard~~ (R1 through R6)

IRO-005-2 — Reliability Coordination – Current Day Operations

- Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination

- Modify R1.2

TOP-005-1 — Operational Reliability Information

- Retire R1 and R1.1
- ~~Convert~~ Modify Attachment 1 ~~into a reference~~

TOP-006-1 — Monitoring System Conditions Voltage and Reactive Control

- Modify R4





**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

**Revisions or Retirements to Already Approved Standards**

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

<p><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p><b>Proposed Replacement Requirement(s)</b></p>
<p><b>EOP-001-0</b></p> <p><b>R2.</b> The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.</p>	<p><b>IRO-009-1 R1.</b></p> <p><b>R1.</b> For <u>each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies all IROLs identified</u> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, EOP-001-0 R2 should be retired.</li> <li>▪ The Reliability Coordinator, not the Transmission Operator, is responsible for developing plans for mitigating IROLs. There are no measures or levels of non-compliance that need to be revised or retired when EOP-001-0 R2 is deleted. Mitigation plans need to be implemented so that the instance of exceeding the IROL is mitigated within the IROL's T<sub>v</sub>, which can be shorter than 30 minutes.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-002-1</b></p> <p><b>R2.</b> Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.</p>	<p><b>IRO-010-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments <u>of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages</u>. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, IRO-002-1 R2 should be retired.</li> <li>▪ IRO-010-1 requires the Reliability Coordinator to develop and distribute a data specification to ensure that entities provide data as needed to support monitoring, analyses and assessments. The proposed requirements are more explicit than the associated requirement in IRO-002-0.</li> </ul>	

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<p><b>IRO-004-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p><b>R2.</b> Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p>	<p><b>IRO-008-1</b></p> <p><b>R1.</b> Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-008-1 becomes effective, IRO-004-1 R1 and R2 should be retired.</li> <li>▪ IRO-008 R1 requires the Reliability Coordinator to look at its 'Wide Area' rather than its 'Reliability Coordinator Area' in conducting its Operational Planning Analyses.</li> <li>▪ IRO-004-1 R2 is not measurable and rather than retain it as the last remaining requirement in this standard, it should be retired when IRO-008 becomes effective.</li> </ul>	

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<p><b>IRO-004-1</b></p> <p><b>R3.</b> Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.</p> <p><b>R6.</b> If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For <u>each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies</u> <del>all IROLs identified</del> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL <u>(in its Reliability Coordinator Area) that the Reliability Coordinator identifies that is identified</u> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL <u>in its Reliability Coordinator Area</u> will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans <u>(not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1)</u> to prevent exceeding that IROL.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-004-1 R3 and R6 should be retired.</li> <li>▪ IRO-009-1 R1 and R2 require the Reliability Coordinator to have plans to prevent and mitigate instances of exceeding IROLs – under some conditions, the Reliability Coordinator may not have time to ‘coordinate’ the development of these plans with all of its Transmission Operators and Balancing Authorities.</li> <li>▪ IRO-009-1 R3 includes language that is more explicit than the language in IRO-004-1 R6: ‘results of these studies’ is not as specific as ‘when an assessment of actual or expected system conditions’.</li> </ul>	

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**IRO-004-1**

**R4.** Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.

**R5.** Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.

**IRO-005-2**

**R2.** Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Interconnection.

**IRO-010-1**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

**R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**R1.2.** Mutually agreeable format.

**R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

**R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

**R2.** The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.

**R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**IRO-008-1**

**R3.** When a Reliability Coordinator determines that the results of an Operational Planning Analysis or Real-Time Assessment indicates the need for specific operational actions to prevent or mitigate an instance of exceeding an IROL, the Reliability Coordinator shall share its results with those entities that are expected to take those actions.

**Notes:**

- When IRO-008-1 and IRO-010-1 become effective, IRO-004-1 R4 and R5 should be retired.
- IRO-010-1 is based on the philosophy that the Reliability Coordinator needs to know, in advance, what data and information it needs and what data and information it needs to share. The periodicity for collecting the data is addressed in IRO-010-1 R1.3. Only a fraction of the reliability-related data needed by the Reliability Coordinator and shared by the Reliability Coordinator is addressed in IRO-004-1 R4. There are two different requirements in IRO-004-1 R5 – to share data with other Reliability Coordinators and for the Reliability Coordinator to share data with entities in its Reliability Coordinator Area. While the first part of IRO-004-1 R5 is replaced by the R3 in IRO-010-1 (requires Reliability Coordinators to provide data to other Reliability Coordinators), the second part of the requirement is replaced by IRO-008-1 R3 (requires the Reliability Coordinator to share the results of its analyses with entities within its Reliability Coordinator Area if those analyses meet certain conditions).
- When IRO-010-1 becomes effective, IRO-005-2 R2 should be retired. The e-tag system replaced the need for this requirement. In addition, if the Reliability Coordinator needs this information, the Reliability Coordinator can add this item to the list of data and information on its data specification under IRO-010 R1



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<p><b>IRO-005-2</b></p> <p><b>R3.</b> As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.</p> <p><b>R5.</b> Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For <u>each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies</u> <del>all IROLs identified</del> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL <u>(in its Reliability Coordinator Area) that the Reliability Coordinator identifies</u> <del>that is identified</del> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL <u>in its Reliability Coordinator Area</u> will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans <u>(not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1)</u> to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL <u>in its Reliability Coordinator Area</u>, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's T<sub>v</sub>.</p>

**Notes:**

- When IRO-009-1 becomes effective, IRO-005-2 R3, and R5 should be retired.
- IRO-005 R3 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a  $T_v$  that is much shorter than 30 minutes.
- IRO-005 R5 can lead the Compliance Enforcement Authority to believe that the Reliability Coordinator has information to see all SOLs, and this is not always true. Every facility in the Transmission Operator's area has a System Operating Limit, but the Reliability Coordinator isn't required to see all these limits and may not have information to determine the cause of instances of exceeding these limits.

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<p><b>IRO-005-2</b></p> <p><b>R9.</b> The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, <del>IROL</del>, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For <u>each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies</u> <del>all IROLs identified</del> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL (<u>in its Reliability Coordinator Area</u>) <del>that the Reliability Coordinator identifies that is identified</del> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL <u>in its Reliability Coordinator Area</u> will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans (<u>not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1</u>) to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL <u>in its Reliability Coordinator Area</u>, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's T<sub>v</sub>.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R9 should be modified.</li> <li>▪ IRO-005 R9 includes two requirements – one for coordinating outages, and one for coordinating the mitigation of IROLs and other limits. IRO-009-1 includes requirements to have and execute action plans to prevent and mitigate instances of exceeding IROLs.</li> </ul>	

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<p><b>IRO-005-2</b>  <b>R13.</b> Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.</p>	<p><b>IRO-009-1</b></p> <p><b>R1.</b> For <u>each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies all IROLs identified</u> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.</p> <p><b>R2.</b> For each IROL <u>(in its Reliability Coordinator Area) that the Reliability Coordinator identifies that is identified</u> one or more days prior to the current day, <del>each the</del> Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's T<sub>v</sub>.</p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL <u>in its Reliability Coordinator Area</u> will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans <u>(not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1)</u> to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL <u>in its Reliability Coordinator Area</u>, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's T<sub>v</sub>.</p> <p><b>R5.</b> If unanimity cannot be reached on the value for an IROL or its T<sub>v</sub>, all Reliability Coordinators who monitor that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration.</p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-009-1 becomes effective, IRO-005-2 R13 should be revised.
- IRO-005 R13 has two requirements – one to direct actions to ensure SOLs and IROLs are not exceeded, and one requirement to operate to the most limiting parameter in situations where there is disagreement on a limit. The first requirement in IRO-015 R13 assumes that the Reliability Coordinator can see all System Operating Limits, and this is not always true. The Reliability Coordinator is responsible for seeing IROLs and controlling operations within its Reliability Coordinator Area so as to prevent instances of exceeding IROLs.
- The second part of IRO-005 R13 requires entities to operate to the most limiting parameter when there is a difference in derived limits. This should be revised so that it is not applicable to the Reliability Coordinator – IRO-009-1 R5 has a similar requirement that is applicable totally to the Reliability Coordinator and focused solely on IROLs.

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<p style="text-align: center;"><b>Already Approved Standard</b></p> <p>(text in blue is recommended for deletion or retirement – the red text is an addition to the text that already exists in the requirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>IRO-005-2</b>  <b>R14.</b> Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide-area view. The Transmission Service Providers shall respect <del>these SOLs or</del> and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.</p> <p><b>R16.</b> Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times.</p> <p><b>R17.</b> When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.</p>	<p><b>IRO-009-1</b></p> <p><b>R3.</b> When an assessment of actual or expected system conditions predicts that an IROL- <u>in its Reliability Coordinator Area</u> will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures, or Plans <u>(not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1)</u> to prevent exceeding that IROL.</p> <p><b>R4.</b> When actual system conditions show that there is an instance of exceeding an IROL <u>in its Reliability Coordinator Area</u>, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's T<sub>v</sub>.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-009-1 becomes effective, IRO-005-2 R14 should be modified and R16 and R17 should be retired.</li> <li>▪ IRO-005-2 R14 part 1 should be retired and part 2 should be modified as it is not correct. Notifying the Transmission Service Provider of SOLs and IROLs is already addressed under FAC-014 R5.1. The Transmission Service Provider should respect both SOLs and IROLs – R14 implies that the Transmission Service Provider may respect ‘either’ SOLs or IROLs.</li> <li>▪ IRO-005 R16 is a mix of requirements and the Missing Measures and Compliance Elements drafting team determined that, as written, R16 is too vague to be measured. The intent of this requirement is duplicated more clearly in IRO-008 and IRO-009.</li> <li>▪ IRO-005 R17 can lead the Reliability Coordinator to believe it has up to 30 minutes to relieve an IROL violation – but some IROLs have a T<sub>v</sub> that is much shorter than 30 minutes.</li> </ul>	

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<p><b>TOP-003-0</b>  <b>R1.</b> Generator Operators and Transmission Operators shall provide planned outage information.</p> <p style="padding-left: 20px;"><b>R1.1</b> Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p style="padding-left: 20px;"><b>R1.2</b> Each Transmission Operator shall provide outage information daily to <del>its Reliability Coordinator, and to</del> affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. <del>The Reliability Coordinator shall establish the outage reporting requirements.</del></p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments <u>of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages.</u> The specification shall include the following:</p> <p style="padding-left: 20px;"><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p> <p style="padding-left: 20px;"><b>R1.2.</b> Mutually agreeable format.</p> <p style="padding-left: 20px;"><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</p> <p style="padding-left: 20px;"><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ -When IRO-010-1 becomes effective, TOP-003-0 R1.2 should be modified. <u>The certification process should include a requirement for the Reliability Coordinator to have a procedure for coordinating outages that includes identification of reliability-related lead times.</u></li> <li>▪ IRO-010-1 requires the Reliability Coordinator to provide data to other Reliability Coordinators in accordance with the data specifications it has received from those other Reliability Coordinators. Daily outage data is one of the types of data that is expected to be identified on the Reliability Coordinator’s documented data specification since this is data needed to maintain real-time models.</li> </ul>	

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p style="text-align: center;"><b>Already Approved Standard</b> (text in blue is recommended for retirement)</p>	<p style="text-align: center;"><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-005-1</b>  <b>R1.</b> Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.</p> <p style="padding-left: 40px;"><b>R1.1</b> Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments <u>of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages</u>. The specification shall include the following:</p> <p style="padding-left: 40px;"><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p> <p style="padding-left: 40px;"><b>R1.2.</b> Mutually agreeable format.</p> <p style="padding-left: 40px;"><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</p> <p style="padding-left: 40px;"><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</p> <p><b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.</p> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-005-1 R1 and R1.1 should be retired.</li> <li>▪ Under IRO-010-1 each Reliability Coordinator must document what data and information it needs and entities must provide that data. The data needed by the Reliability Coordinator is needed for more than just reliability assessments – some of the data is used for real-time monitoring. Several entities, beyond the Transmission Operator and Balancing Authority (the only responsible entities identified in R1 of TOP-005-1) have data and information needed by the Reliability Coordinator.</li> </ul>	



Already Approved Standard	Proposed Replacement
<p><b>TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data</b></p> <p>This Attachment lists the types of data that <del>Reliability Coordinators</del>, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with <del>each other</del> <u>Balancing Authorities and Transmission Operators</u>.</p> <ol style="list-style-type: none"> <li>1. The following information shall be updated at least every ten minutes:               <ol style="list-style-type: none"> <li>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:                   <ol style="list-style-type: none"> <li>1.1.1 Status.</li> <li>1.1.2 MW or ampere loadings.</li> <li>1.1.3 MVA capability.</li> <li>1.1.4 Transformer tap and phase angle settings.</li> <li>1.1.5 Key voltages.</li> </ol> </li> <li>1.2. Generator data.                   <ol style="list-style-type: none"> <li>1.2.1 Status.</li> <li>1.2.2 MW and MVAR capability.</li> <li>1.2.3 MW and MVAR net output.</li> <li>1.2.4 Status of automatic voltage control facilities.</li> </ol> </li> <li>1.3. Operating reserve.                   <ol style="list-style-type: none"> <li>1.3.1 MW reserve available within ten minutes.</li> </ol> </li> <li>1.4. Balancing Authority demand.                   <ol style="list-style-type: none"> <li>1.4.1 Instantaneous.</li> </ol> </li> <li>1.5. Interchange.                   <ol style="list-style-type: none"> <li>1.5.1 Instantaneous actual interchange with each Balancing Authority.</li> <li>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</li> <li>1.5.3 Interchange Schedules for the next 24 hours.</li> </ol> </li> <li>1.6. Area Control Error and frequency.                   <ol style="list-style-type: none"> <li>1.6.1 Instantaneous area control error.</li> <li>1.6.2 Clock hour area control error.</li> <li>1.6.3 System frequency at one or more locations in the Balancing Authority.</li> </ol> </li> </ol> </li> <li>2. Other operating information updated as soon as available.               <ol style="list-style-type: none"> <li>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</li> <li>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</li> <li>2.3. Forecast peak demand for current day and next day.</li> <li>2.4. Forecast changes in equipment status.</li> <li>2.5. New facilities in place.</li> <li>2.6. New or degraded special protection systems.</li> <li>2.7. Emergency operating procedures in effect.</li> <li>2.8. Severe weather, fire, or earthquake.</li> <li>2.9. Multi-site sabotage.</li> </ol> </li> </ol>	<p><del>New Technical Reference—in accordance with FERC Order 693, add the following to this list:</del></p> <ul style="list-style-type: none"> <li><del>•operational status of special protection systems</del></li> <li><del>•operational status of power system stabilizers</del></li> </ul> <p><b><u>IRO-010-1</u></b></p> <p><b><u>R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</u></b></p>

## Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards

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### Notes:

- When IRO-010-1 becomes effective, 'Attachment 1-TOP-005-0 Electric System Reliability Data' should be ~~translated into a Technical Reference. This data is only a partial list of data and information that the Reliability Coordinator needs to support reliable operations~~modified to omit the reference to the Reliability Coordinator. The Reliability Coordinator's requirement to share data with other Reliability Coordinators is addressed in IRO-010-1 R3. The reference should include the operational status of special protection systems and the operational status of power system stabilizers to comply with one of the FERC directives in Order 693.

**Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards**

<p><b>Already Approved Standard</b> (text in blue is recommended for deletion)</p>	<p><b>Proposed Replacement Requirement(s)</b></p>
<p><b>TOP-006-1</b>  <b>R4.</b> Each <del>Reliability Coordinator</del>, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system’s near-term load pattern.</p>	<p><b>IRO-010-1</b>  <b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments <u>of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages</u>. The specification shall include the following:  <b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.  <b>R1.2.</b> Mutually agreeable format.  <b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).  <b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.   <b>R2.</b> The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator.   <b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>▪ When IRO-010-1 becomes effective, TOP-006-1 R4 should be modified.</li> <li>▪ The information identified in TOP-006-1 R4 is not inclusive, and is addressed more globally for the Reliability Coordinator in IRO-010-1 R1 and R3.</li> </ul>	

**Functions that Must Comply with the Requirements in the Standards**

Standard	Functions that Must Comply With the Requirements							
	Reliability Coordinator	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load Serving Entity
IRO-008-1 Analyses & Assessments	X							
IRO-009-1 Actions to Operate within IROLs	X							
IRO-010-1 Data Specification & Collection	X	X	X	X	X	X	X	X

**Effective Dates**

In those jurisdictions where no regulatory approval is required, the standards shall all become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standards shall all become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## FERC Directives in Order 693 Addressed in IROL Implementation Plan

The following Interconnection Reliability Operating Limit (IROL) standards were under development when the Version 0 project was initiated:

IRO-008 — Reliability Coordinator Operational Analyses and Real-time Assessments

IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

IRO-010 — Reliability Coordinator Data Specification and Collection

While these three standards are “new” standards, not revisions to Version 0 standards, the new standards do address some of the same topics as addressed in some of the Version 0 standards that were addressed in Order 693. The implementation plan for the new IROL standards calls for modifications or deletions to the following standards:

EOP-001-0 — Emergency Operations Planning

- Retire R2

IRO-002-1 — Reliability Coordination – Facilities

- Retire R2

IRO-004-1 — Reliability Coordination – Operations Planning

- Retire R1 through R6

IRO-005-2 — Reliability Coordination – Current Day Operations

- Retire R2, R3, and R5; modify R9, R13 and R14; retire R16 and R17

TOP-003-0 — Planned Outage Coordination

- Modify R1.2

TOP-005-1 — Operational Reliability Information

- Retire R1 and R1.1
- Modify Attachment 1

TOP-006-1 — Monitoring System Conditions

- Modify R4

The drafting team did not identify any directives in Order 693 relative to IRO-002 Requirement R2, TOP-003 Requirement R1.2, TOP-005 R1, R1.1, or TOP-006 Requirement R4.

## EOP-001-0 — Emergency Operations Planning

The IROL Implementation Plan calls for replacing EOP-001 R2 with IRO-009 R1 and R2:

**EOP-001 R2.** The Transmission Operator shall have an emergency load reduction plan for all identified IROLs. The plan shall include the details on how the Transmission Operator will implement load reduction in sufficient amount and time to mitigate the IROL violation before system separation or collapse would occur. The load reduction plan must be capable of being implemented within 30 minutes.

**IRO-009 R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.

**IRO-009 R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ .

Summary of FERC Directives from Order 693 Relative to EOP-001:

Paragraph 566. Accordingly, the Commission concludes that Reliability Standard EOP-001-0 is just, reasonable, not unduly discriminatory or preferential and in the public interest and approves it as mandatory and enforceable. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to EOP-001-0 through the Reliability Standards development process that: (1) includes the reliability coordinator as an applicable entity with responsibilities as described above; (2) clarifies the 30-minute requirement in Requirement R2 of the Reliability Standard to state that load shedding should be capable of being implemented as soon as possible but in no more than 30 minutes; (3) includes definitions of system states to be used by the operators, such as transmission-related “normal,” “alert” and “emergency” states, provides criteria for entering into these states, and identifies the authority that will declare these states and (4) clarifies that the actual emergency plan elements, and not the “for consideration” elements of Attachment 1, should be the basis for compliance. Further, the Commission directs the ERO to consider a pilot program for system states, as discussed above.

*The first directive is further clarified in Paragraph 547:*

... Given the importance NERC attributes to the reliability coordinator in connection with matters covered by EOP-001-0, the Commission is persuaded that specific responsibilities for the reliability coordinator in the development and coordination of emergency plans must be included as part of this Reliability Standard.

### Discussion:

(1) Include the reliability coordinator as an applicable entity with responsibilities as described above.

Modifying the entire standard is outside the scope of the IROL SDT. The IROL SDT did modify the responsibility for Requirement R2 so that instead of assigning the TOP the responsibility for having load reduction plans for resolving IROLs, the RC is responsible for having action plans that will prevent and/or mitigate instances of exceeding IROLs. The TOP is not required to have the wide area view

necessary for developing action plans relative to IROLs. The proposed requirements (R1 and R2) in IRO-009 meet the intent of the first directive.

(2) **Clarify the 30-minute requirement in Requirement R2 of the Reliability Standard to state that load shedding should be capable of being implemented as soon as possible but in no more than 30 minutes**

When developing the IROL standard, the IROL drafting team determined that there are some IROLs that must be resolved in a timeframe that is shorter than 30 minutes. FAC-010 and FAC-011 require that each IROL have an associated  $T_v$  – with  $T_v$  defined as follows:

The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's  $T_v$  shall be less than or equal to 30 minutes.

IRO-009 R2 requires that each action plan developed to resolve an IROL must be capable of being executed such that the IROL is relieved within the IROL's  $T_v$ .

While the drafting team did include a reference to load shedding, the team did not highlight this as the only means of resolving an IROL.

IRO-009 R4 requires the RC to act, without delay, when actual system conditions show that there is an instance of exceeding an IROL.

As shown below, EOP-001 R4, which is not recommended for retirement by the IROL SDT, requires the TOP to have load reduction plans that can be executed within a specific timeframe.

**EOP-001 R4.** Each Transmission Operator and Balancing Authority shall have emergency plans that will enable it to mitigate operating emergencies. At a minimum, Transmission Operator and Balancing Authority emergency plans shall include:

**R4.1.** Communications protocols to be used during emergencies.

**R4.2.** A list of controlling actions to resolve the emergency. Load reduction, in sufficient quantity to resolve the emergency within NERC-established timelines, shall be one of the controlling actions.

The Violation Severity Levels penalize the RC for not having action plans for IROLs identified at least a day ahead, for delays in acting to prevent exceeding an IROL, and for failure to resolve an IROL within the IROL's  $T_v$ .

The proposed requirements achieve the objective of the second directive.

Directives 3 and 4 are outside the scope of the IROL SDT.

**IRO-002 — Reliability Coordination – Facilities**

The IROL Implementation Plan calls for replacing IRO-002 R2 with IRO-010 R1.

**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load-Serving Entities, or adjacent Reliability Coordinators.

**IRO-010-1**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

- R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.
- R1.2.** Mutually agreeable format.
- R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).
- R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

908. As we stated in the NOPR,<sup>295</sup> Reliability Standard IRO-002-1 serves an important purpose in ensuring that reliability coordinators have the information, tools and capabilities to perform their functions. The Measures and Levels of Non-Compliance submitted by NERC further enhance the Reliability Standard. Accordingly, the Commission approves Reliability Standard IRO-002-1 as mandatory and enforceable. In addition we direct the ERO to develop a modification to IRO-002-1 through the Reliability Standards development process that requires a minimum set of tools that should be made available to reliability coordinators.

**Discussion:** The certification process is expected to specify the minimum set of tools that should be made available to reliability coordinators. Tools that are used on a routine basis are needed to meet other performance-based requirements in reliability standards and allocating resources to verifying that the tools are in use is not the best use of limited resources. Addressing the directive to require a minimum set of tools that should be made available to reliability coordinators in the certification process is an equally efficient and effective method of achieving the intent of the directive.



**IRO-004**

**The IROL Implementation Plan calls for the retirement of all requirements in IRO-004.**

IRO-004 R1 and R3 are the requirements for conducting a next-day reliability analyses and developing associated action plans – these were replaced with IRO-008 R1 and IRO-009 R1 and R2:

**IRO-004 R1.** Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.

**IRO-004 R3.** Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.

**IRO-008 R1. R1.** Each Reliability Coordinator shall perform an Operational Planning Analysis to assess whether the planned operations for the next day within its Wide Area, will exceed any of its Interconnection Reliability Operating Limits (IROLs) during anticipated normal and Contingency event conditions.

**IRO-009 R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.

**IRO-009 R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ .

935. Accordingly, we approve Reliability Standard IRO-004-1 as mandatory and enforceable. Further, we direct the ERO to modify IRO-004-1 through the Reliability Standards development process to require the next-day analysis to identify control actions that can be implemented and effective within 30 minutes after a contingency.

**Discussion:** When developing the IROL standard, the IROL drafting team determined that there are some IROLs that must be resolved in a timeframe that is shorter than 30 minutes. FAC-010 and FAC-011 require that each IROL have an associated  $T_v$  – with  $T_v$  defined as follows:

The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's  $T_v$  shall be less than or equal to 30 minutes.

IRO-009 R2 requires that each action plan developed to resolve an IROL must be capable of being executed such that the IROL is relieved within the IROL's  $T_v$ . The proposed requirement meets the intent of the directive.

During discussions with FERC staff, the drafting team was advised to address how the IROL standards achieve the intent of the directive in Order 693, paragraph 1601, which is relative to next-day analyses.

1601. . . .Therefore, we direct the ERO to modify Reliability Standard TOP-002-2 to require the next-day analysis for all IROLs to identify and communicate control actions to system operators that can be implemented within 30 minutes following a contingency to return the system to a reliable operating state and prevent cascading outages.

**Discussion:** FERC staff advised the drafting team that paragraph 1601 requires that the system operator be provided with action plans to use to prepare for the next contingency during the adjustment time period when an IROL has been exceeded but the system hasn't been returned to a "stable" or "normal" state. The plans should address every possible second contingency and should include specific control actions.

All drafting team members interpreted paragraph 1601 as requiring the development of action plans that can be implemented in time to resolve the IROL within the IROL's  $T_v$  and this is required, as noted above, in IRO-009-1 Requirements R1 and R2.

### IRO-005

**The IROL Implementation Plan calls for the retirement of the R2, R3, R5, R16 and R17 and the modification of R6, R13 and R14 in IRO-005.**

IRO-005-2 ensures energy balance and transmission reliability for the current day by identifying tasks that reliability coordinators must perform throughout the day. IRO-005-1 includes 17 requirements, covering a wide range of reliability coordination activities, assigned primarily to the Reliability Coordinator. Some of the requirements in IRO-005 are recommended for retirement when IRO-009 and IRO-010 become effective. The proposed revisions to IRO-005 include retiring R2, R3, R5, R16 and R17 – and modifying R9, R13, and R14.

The directives relative to IRO-005 were aimed at adding the missing measures and levels of non-compliance (now Violation Severity Levels) and at ensuring that the penalties for exceeding IROLs were commensurate with the magnitude, duration, frequency and causes of the violations and whether these occur during normal or contingency conditions.

For the requirements in IRO-005 that have been recommended for retirement, the following address instances of exceeding IROLs:

**IRO-005 R3.** As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation.

**IRO-005 R5.** Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation.

**IRO-009 R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*)

**IRO-009 R2.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*)

**IRO-009 R3.** When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. (*Violation Risk Factor: High*)

**IRO-009 R4.** When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*)

**IRO-009 Violation Severity Levels:**

**There is a high VSL for the following:**

- Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL in its Reliability Coordinator Area, however the IROL was mitigated within the IROL  $T_v$ . (R4)

951. Accordingly, the Commission approves Reliability Standard IRO-005-1 as mandatory and enforceable. Further, because IRO-005-1 has no Measures or Levels of Non-Compliance, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to IRO-005-1 through the Reliability Standards development process that includes Measures and Levels of Non-Compliance. The Commission further directs that the Measures and Levels of Non-Compliance specific to IROL violations must be commensurate with the magnitude, duration, frequency and causes of the violations and whether these occur during normal or contingency conditions. Finally, the Commission directs the ERO to conduct a survey on IROL practices and actual operating experiences by requiring reliability coordinators to report any violations of IROL, their causes, the date and time, the durations and magnitudes in which actual operations exceeds IROLs to the ERO on a monthly basis for one year beginning two months after the effective date of the Final Rule. We may propose further modifications to IRO-005-1 based on the survey results.

**Discussion:**

The Violation Severity Levels, in conjunction with the Violation Risk Factors form the starting point for the determination of a penalty or sanction. The requirements associated with having action plans are assigned a “Medium” VRF – and the requirements associated with acting to prevent or mitigate instances of exceeding an IROL are assigned a “High” VRF.

**There is a high violation severity level for the following:**

- Actual system conditions showed that there was an instance of exceeding an IROL, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL  $T_v$ . (R4)

**There is a severe violation severity level for any of the following:**

- An IROL was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
- An IROL identified one or more days in advance does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL's  $T_v$ . (R2)
- An assessment of actual or expected system conditions predicted that an IROL would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
- Actual system conditions showed that there was an instance of exceeding an IROL, and that IROL was not resolved within the IROL's  $T_v$ . (R4)

## **FERC Directives in Order 693 Addressed in IROL Implementation Plan**

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A delay in acting to mitigate an instance of exceeding an IROL but resolving the IROL within its  $T_v$  is assigned a “High” VSL. A total violation of any of these four requirements to have plans or take actions results in a “Severe” VSL. Applying the violation of the requirements to the sanctions table:

- The violation of a Medium VRF with a Severe VSL has a sanction starting point of \$10-\$335k (failure to have action plans)
- The violation of a High VRF with a Medium VSL has a sanction starting point of \$12-\$625k (delay in acting to mitigate but resolved within  $T_v$ )
- The violation of a High VRF with a Severe VSL has a sanction starting point of \$20-\$1,000k (exceeded IROL for time greater than  $T_v$ )

The Sanctions Guidelines give the Compliance Enforcement Authority the ability to increase or decrease the size of the penalty based on other factors, such as the number of violations, etc.

The levels of noncompliance have been replaced with violation severity levels. The combination of violation risk factors and violation severity levels meet the intent of the directive.

## TOP-003-0 — Planned Outage Coordination

The IROL Implementation Plan calls for revising TOP-003-0 Requirement R1.2 when IRO-010 becomes effective.

**R1.** Generator Operators and Transmission Operators shall provide planned outage information.

**R1.1** Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.

**R1.2** Each Transmission Operator shall provide outage information daily to ~~its Reliability Coordinator, and to~~ affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. ~~The Reliability Coordinator shall establish the outage reporting requirements.~~

1626. Planned outage coordination is a necessary element of reliable operations, and TOP-003-0 promotes that goal. Accordingly, the Commission approves the Reliability Standard as mandatory and enforceable. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-003-0 through the Reliability Standards development process that: (1) includes a new requirement to communicate longer term outages well in advance to ensure reliability and accuracy of ATC calculation; (2) makes any facility below the voltage thresholds that, in the opinion of the transmission operator, balancing authority, or reliability coordinator, will have a direct impact on the operation of Bulk-Power System, subject to Requirement R1 for planned outage coordination and (3) incorporates an appropriate lead time for planned outages as discussed above.

**Discussion:** There are three directives, the first one applies to the ATC standards – and seems to be addressed in the proposed ATC standards. The second directive should be addressed by the Real-time BA/TOP SDT and the third directive should be addressed in the certification process for the Reliability Coordinator. Requiring the entity applying for certification produce its procedure for coordinating planned outages ensures that the procedure exists at the point in time when the entity begins operating as a Reliability Coordinator. The proposed requirement in the certification process includes:

- Require the prospective Reliability Coordinator to have a procedure for coordination of planned generation and transmission outages that includes the following:
  - Identification of a lead time for planned outages that provides sufficient time for reliability-related coordination
  - Identification of the criteria used to determine which outages to approve when there are multiple requests for outages and they can't all be approved

This is an equally efficient and effective method of meeting the intent of this directive.

## TOP-005

The IROL Implementation Plan calls for modifying Attachment 1 of TOP-005-1 to omit the references to the Reliability Coordinator, and calls for replacing R1 and R1.1 with IRO-010-1 R1 and R3:

**TOP-005 R1.** Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.

**R1.1** Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.

### TOP-005-1 Attachment 1-TOP-005-0 - Electric System Reliability Data

This Attachment lists the types of data that ~~Reliability Coordinators~~, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with ~~each~~ other ~~Balancing Authorities and Transmission Operators~~.

**IRO-010 R1. R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

- R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments.
- R1.2.** Mutually agreeable format
- R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)
- R1.4.** Process for data provision when automated Real-time system operating data is unavailable.

**IRO-010 R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments.

1651. Accordingly, the Commission approves Reliability Standard TOP-005-1. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-005-1 through the Reliability Standards development process that: (1) includes information about the operational status of special protection systems and power system stabilizers in Attachment 1 and (2) deletes references to confidentiality agreements, but addresses the issue separately to ensure that necessary protections are in place related to confidential information.

**Discussion:** The directives are not relative to the proposed modifications to TOP-005. The attachment referenced is TOP-005-1 Requirement R3 references Attachment 1 and R3 is not being retired by the IROL SDT.

## TOP-006

The IROL Implementation Plan calls for the modification of R4 in TOP-006 when IRO-010-1 becomes effective.

### TOP-006-1

**R4.** Each ~~Reliability Coordinator~~, Transmission Operator, and Balancing Authority shall have information, including weather forecasts and past load patterns, available to predict the system's near-term load pattern.

**IRO-010 R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

- R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments.
- R1.2.** Mutually agreeable format
- R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses)
- R1.4.** Process for data provision when automated Real-time system operating data is unavailable.

**IRO-010 R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-time Monitoring, Operational Planning Analyses, and Real-time Assessments.

1665. Accordingly, the Commission approves Reliability Standard TOP-006-1. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to TOP-006-1 through the Reliability Standards development process that: (1) includes a new requirement related to the provision of minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk-Power System and (2) clarifies the meaning of "appropriate technical information" concerning protective relays.

**Discussion:** The drafting team does not believe that either of these directives is applicable to the modification proposed for R4. The directive to specify minimum capabilities is being addressed through the certification process as an equally efficient and effective method of achieving the intent of the directive. The second directive is relative to TOP-006-1 R3 which is not being modified by the IROL SDT.



## Standards Announcement

Eight Initial Ballot Windows Open July 21, 2008

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

### Initial Ballot Windows for IRO-008-1, IRO-009-1 and IRO-010-1 Open July 21, 2008

The [initial ballots](#) for the following [Interconnection Reliability Operating Limit](#) (IROL) standards and their associated implementation plan open at 8 a.m. (EDT) on Monday, July 21, 2008:

- [IRO-008-1](#) — Reliability Coordinator Operational Analyses and Real-time Assessments
- [IRO-009-1](#) — Reliability Coordinator Actions to Operate within IROLs
- [IRO-010-1](#) — Reliability Coordinator Data Specification and Collection

These standards require the Reliability Coordinator (RC) to take actions to keep the bulk electric system operating within IROLs.

The ballot for each standard includes the retirement or revision of associated requirements from some already-approved standards as identified in the table below. The IROL [implementation plan](#) contains the justification for the recommended retirements and revisions.

Three Ballots for IROL Standards	
Ballot for New Standard	Includes Modifications to Associated Approved Standards
IRO-008 — RC Operational Analyses and Real-time Assessments	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R1 and R2</li> </ul>
IRO-009 — RC Actions to Operate within IROLs	EOP-001-0 — Emergency Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>
	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R3 and R6</li> </ul>
	IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R3, R5, R16, R17;</li> <li>▪ Modify R9, R13 and R14</li> </ul>
IRO-010 — RC Data Specification and Collection	IRO-002-1 — RC – Facilities <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>
	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R4, R5</li> </ul>
	IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>
	TOP-003-0 — Planned Outage Coordination <ul style="list-style-type: none"> <li>▪ Modify R1.2</li> </ul>
	TOP-005-1 — Operational Reliability Information <ul style="list-style-type: none"> <li>▪ Retire R1, R1.1</li> </ul>
	TOP-006-1 — Monitoring System Conditions <ul style="list-style-type: none"> <li>▪ Modify R4</li> </ul>

The initial ballot for each of the above standards will **close** at 8 p.m. (EDT) on Wednesday, **July 30, 2008**.

**Five Initial Ballot Windows for Project 2006-07 — ATC/TRM and CBM/TRM Open July 21, 2008**

The [initial ballots](#) for the following [ATC-related standards](#) and their associated implementation plans open at 8 a.m. (EDT) on Monday, July 21, 2008:

- [MOD-001](#) — Available Transfer Capability
- [MOD-008](#) — Transmission Reliability Margin
- [MOD-028](#) — Area Interchange Methodology
- [MOD-029](#) — Rated System Path Methodology
- [MOD-030](#) — Flowgate Methodology

This set of standards requires consistency in the calculation and documentation of Transmission Reliability Margin (TRM), Total Transfer Capability (TTC), Available Flowgate Capability (AFC), and Available Transfer Capability (ATC). (Note that the ATC-related standard for Capacity Benefit Margin is not included in this set of ballots.)

The ballot for each standard includes the retirement of associated approved standards as identified in the table below. The [implementation plans](#) contain the justification for the recommended retirements.

Five Ballots for ATC-related Standards	
Ballot for New Standard	Includes Retirement of Associated Approved Standards
MOD-001-1 — Available Transfer Capability	MOD-001-0 — Documentation of TTC and ATC Calculation Methodologies FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs
MOD-008-1 — Transmission Reliability Margin	MOD-008-0 — Documentation and Content of Each Regional TRM Methodology MOD-009-0 — Procedure for Verifying TRM Values
MOD-028-1 — Area Interchange Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs
MOD-029-1 — Rated System Path Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs
MOD-030-1 — Flowgate Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs

The initial ballot for each of the above standards will **close** at 8 p.m. (EDT) on Wednesday, **July 30, 2008**.

**Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance, please contact Maureen Long, Standards Process Manager, at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or at (813) 468-5998.*

**Barbara Bogenrief**

**From:** Barbara Bogenrief  
**Sent:** Thursday, July 31, 2008 8:11 AM  
**To:** Barbara Bogenrief  
**Subject:** NERC Standards Announcement - Initial Ballot Results



## Standards Announcement

### Initial Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

#### Initial Ballot Results for Three IROL-related Standards and Associated Implementation Plans

The initial ballots for the following Interconnection Reliability Operating Limit ([IROL](#)) related standards (and the associated retirements and revisions identified in their implementation plans) were conducted from July 21 through July 30, 2008 and the results are shown in the table below.

Three Ballots for IROL-related Standards		
Ballot for New Standard	Includes Modifications to Associated Approved Standards	Initial Ballot Results
IRO-008 — RC Operational Analyses and Real-time Assessments	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>Retire R1 and R2</li> </ul>	Quorum: 92.67 Approval: 91.71
IRO-009 — RC Actions to Operate within IROLs	EOP-001-0 — Emergency Operations Planning <ul style="list-style-type: none"> <li>Retire R2</li> </ul>	Quorum: 92.63 Approval: 89.44
	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>Retire R3 and R6</li> </ul>	
	IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>Retire R3, R5, R16, R17;</li> <li>Modify R9, R13 and R14</li> </ul>	
IRO-010 — RC Data Specification and Collection	IRO-002-1 — RC – Facilities <ul style="list-style-type: none"> <li>Retire R2</li> </ul>	Quorum: 92.71 Approval: 88.40
	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>Retire R4, R5</li> </ul>	
	IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>Retire R2</li> </ul>	
	TOP-003-0 — Planned Outage Coordination <ul style="list-style-type: none"> <li>Modify R1.2</li> </ul>	
	TOP-005-1 — Operational Reliability Information <ul style="list-style-type: none"> <li>Retire R1, R1.1</li> </ul>	
	TOP-006-1 — Monitoring System Conditions <ul style="list-style-type: none"> <li>Modify R4</li> </ul>	

Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and
- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.

The [Ballot Results](#) standards web page provides a link to the detailed results of each of these ballots. Each of the ballots received some negative votes with comments, and the drafting team will review the comments before determining its next step.

#### Initial Ballot Results for Five ATC-related Standards and Associated Implementation Plans (Project 2006-07)

The initial ballots for five [ATC-related standards](#) (and the associated retirements identified in their implementation plans) were conducted from July 21 through July 30, 2008 and the results are shown in the table below. Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and

- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.

The [Ballot Results](#) standards web page provides a link to the detailed results of each of these ballots. Each of the ballots received some negative votes with comments, and the drafting team will review the comments before determining its next step.

Five Ballots for ATC-related Standards		
Ballot for New Standard	Includes Retirement of Associated Approved Standards	Initial Ballot Results
MOD-001-1 Available Transfer Capability	MOD-001-0 — Documentation of TTC and ATC Calculation Methodologies FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 94.02 Approval: 75.97
MOD-008-1 Transmission Reliability Margin	MOD-008-0 — Documentation and Content of Each Regional TRM Methodology MOD-009-0 — Procedure for Verifying TRM Values	Quorum: 94.27 Approval: 80.44
MOD-028-1 Area Interchange Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 94.64 Approval: 79.47
MOD-029-1 Rated System Path Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 94.67 Approval: 92.62
MOD-030-1 Flowgate Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 94.37 Approval: 56.56

### Standards Development Procedure

The [Reliability Standards Development Procedure Manual](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance, please contact Maureen Long, Standards Process Manager, at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or at (813) 468-5998.*

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Ballot Results	
<b>Ballot Name:</b>	IROL Standard - IRO-008_in
<b>Ballot Period:</b>	7/21/2008 - 7/30/2008
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	177
<b>Total Ballot Pool:</b>	191
<b>Quorum:</b>	<b>92.67 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	91.71 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote	
			# Votes	Fraction	# Votes	Fraction	# Votes		
1 - Segment 1.		56	1	44	0.88	6	0.12	2	4
2 - Segment 2.		9	0.8	8	0.8	0	0	0	1
3 - Segment 3.		46	1	34	0.895	4	0.105	6	2
4 - Segment 4.		8	0.8	7	0.7	1	0.1	0	0
5 - Segment 5.		33	1	28	0.933	2	0.067	0	3
6 - Segment 6.		21	1	17	0.895	2	0.105	0	2
7 - Segment 7.		1	0	0	0	0	0	0	1
8 - Segment 8.		3	0.3	3	0.3	0	0	0	0
9 - Segment 9.		7	0.6	6	0.6	0	0	0	1
10 - Segment 10.		7	0.7	6	0.6	1	0.1	0	0
<b>Totals</b>		<b>191</b>	<b>7.2</b>	<b>153</b>	<b>6.603</b>	<b>16</b>	<b>0.597</b>	<b>8</b>	<b>14</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Ameren Services Company	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Basin Electric Power Cooperative	David Rudolph	Negative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Central Maine Power Company	Brian Conroy		
1	Consolidated Edison Co. of New York	Edwin E. Thompson PE	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils	Negative	<a href="#">View</a>
1	E.ON U.S. LLC	Larry Monday	Affirmative	
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	

1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Negative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	<a href="#">View</a>
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Hydro-Quebec TransEnergie	Julien Gagnon	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	
1	Lincoln Electric System	Doug Bantam	Negative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Negative	<a href="#">View</a>
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Orlando Utilities Commission	Brad Chase	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Platte River Power Authority	John C Collins	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Abstain	
1	Sacramento Municipal Utility District	Dilip Mahendra	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Christopher M. Turner	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Tampa Electric Co.	Thomas J. Szelistowski	Affirmative	
1	Tennessee Valley Authority	Larry Akens	Affirmative	
1	Tucson Electric Power Co.	Ronald P. Belval		
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Western Farmers Electric Coop.	Alan Derichsweiler		
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee		
2	British Columbia Transmission Corporation	Phil Park	Affirmative	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Affirmative	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services Company	Mark Peters	Abstain	

3	American Electric Power	Raj Rana	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Avista Corp.	Robert Lafferty	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Negative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Abstain	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Negative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	North Carolina Municipal Power Agency #1	Denise Roeder	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Abstain	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Tampa Electric Co.	Ronald L. Donahey		
3	Tennessee Valley Authority	Cynthia Herron		
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Negative	
4	Consumers Energy	David Frank Ronk	Affirmative	
4	Florida Municipal Power Agency	Ralph Anderson	Affirmative	
4	Northern California Power Agency	Fred E. Young	Affirmative	
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	BC Hydro and Power Authority	Clement Ma	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	

5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	
5	Conectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative	
5	Florida Power & Light Co.	Robert A. Birch	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florom	Negative	<a href="#">View</a>
5	Louisville Gas and Electric Co.	Charlie Martin	Affirmative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Orlando Utilities Commission	Richard Kinas	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern California Edison Co.	David Schiada	Affirmative	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tampa Electric Co.	Frank L Busot		
5	Tenaska, Inc.	Scott M. Helyer	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer		
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Entergy Services, Inc.	William Franklin	Affirmative	<a href="#">View</a>
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb		
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent	Affirmative	
8	Volkman Consulting	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	
9	National Association of Regulatory	Diane J. Barney		



	Utility Commissioners			
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Philip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Negative	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Carter B Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

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**Initial Ballot Comments — Project for IROL Standard — IRO-008-1**

Entity	Segment	Vote	Comment
American Electric Power	1	Negative	AEP votes No. this proposed Standard calls for the Reliability Coordinator to specify the real-time data and information they require to support real-time monitoring, operational planning analyses, and real-time assessments without restriction. This allows for the Reliability Coordinator to ask for the addition of a significant amount of SCADA installations at the expense of the transmission owners in transmission areas that are not pertinent to the purpose of IRO-010-1 which is preventing the instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection. The Standard should tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROLs.
Bonneville Power Administration	1	Negative	We do not believe that the IRO-010-1 C.M3 has text that is sufficient to be able to know what is adequate to confirm that we provided data, particularly data such as continually updated ICCP data used for situational awareness and using on-line reliability tools.
Duke Energy Carolina	1	Negative	Duke Energy appreciates the opportunity to vote and comment on this proposed Standard. IRO-010-1 Requirement R3 requires that “Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship”. We are unsure what the phrase “with which it has a reliability relationship” means. IRO-008-1, IRO-009-1 and IRO-010-1 all introduce new terms that are not defined in the NERC Glossary. “Operations Planning”, “Same Day Operations” and “Real-time Operations” are used to identify time horizons for requirements.
FirstEnergy Energy Delivery	1	Affirmative	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General</p> <ul style="list-style-type: none"> <li>• The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows “R7” instead of “R1” IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4</li> <li>• There is no measure associated with this requirement - Measures do not include evidence of “planning” of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</li> </ul>
Great River Energy	1	Negative	IRO-010 does a good job of stating the requirements of the Reliability Coordinator. However, the standard gives the appearance of having taken away the TOP and BA ability to obtain study data from the RC unless they are specifically involved with the mitigation of an IROL. It is GRE's opinion that entities should be able to obtain data from the Reliability Coordinator upon request as they are able to now. GRE understands that the Reliability Coordinator's responsibility to share data was moved in part to IRO-008-1_R3. The new requirement however does not make is sufficiently transparent that the TOP and BA can request the Assessment results if they choose.

Initial Ballot Comments — Project for IROL Standard — IRO-008-1

Entity	Segment	Vote	Comment
Hydro One Networks, Inc.	1	Affirmative	Hydro One Networks is casting an affirmative vote on the IRO-010 Standard. However, we believe that Requirement R3. should be modified at the earliest possible time when the standard is revised. Requirement R3. must be clear that when referring to data specifications it is within the parameters specified in Requirement R1. Consequently, R3 should read: R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship.
Minnesota Power, Inc.	1	Negative	<p>1. On page 10 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R4 &amp; R5 and IRO-005-2 R2 while the proposed replacement requirements are IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3. Minnesota Power's comment to IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3 is, "The SDT has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now."</p> <p>2. On page 18 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-003-0 R1 while the proposed replacement requirements are IRO-010-1 R1, R2, &amp; R3. Minnesota Power's comment is, "Minnesota Power believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer."</p> <p>3. On page 19 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-005-0 R1 while the proposed replacement requirement is IRO-010-1 R1. Minnesota Power's comment is, "Interchange transaction data should be added to the new IRO-010-1 R1."</p> <p>4. On page 20 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-005-1 Attachment 1-TOP-005-0 Electric System Data Reliability Data while the proposed replacement requirement is IRO-010-1 R3. Minnesota Power's comment is, "Agree — Data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1.</p> <p>5. On page 22 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-006-1 R4 while the proposed replacement requirement is IRO-010-1 R1 R2, &amp; R3. Minnesota Power's comment to TOP-006-1 R4 is, "Minnesota Power don't agree with removing reliability coordinator from the requirement. — Including the Reliability Coordinator in the statement that the RC, TO &amp; BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity."</p>

Initial Ballot Comments — Project for IROL Standard — IRO-008-1

Entity	Segment	Vote	Comment
National Grid	1	Affirmative	<p>National Grid agrees with the comments suggested by NPCC with regard to Requirement R3. We suggest that the wording be revised at a later date to include a reference to Requirement R1. The suggested wording is as follows:</p> <p>“R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship. (Violation Risk Factor: Medium) (Time Horizon: Operations Planning; Same-day Operations; Real-time Operations)”</p>
Northeast Utilities	1	Affirmative	<p>Insert in R3, "as specified in R1," after "... shall provide data and information, ...".</p>
Bonneville Power Administration	3	Negative	<p>BPA does not believe that the IRO-010-1 C.M3 has text that is sufficient to be able to know what is adequate to confirm that we provided data, particularly data such as continually updated ICCP data used for situational awareness and using on-line reliability tools</p>
Consolidated Edison Co. of New York	3	Affirmative	<p>R3 may be revised at a later date to include a reference to R1 as follows:</p> <p>“R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship. (Violation Risk Factor: Medium) (Time Horizon: Operations Planning; Same-day Operations; Real-time Operations)”</p>
FirstEnergy Solutions	3	Affirmative	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General</p> <ul style="list-style-type: none"> <li>• The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows “R7” instead of “R1” IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4.</li> <li>• There is no measure associated with this requirement - Measures do not include evidence of “planning” of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</li> </ul>
Hydro One Networks, Inc.	3	Affirmative	<p>Hydro One Networks is casting an affirmative vote on the IRO-010 Standard. However, we believe that Requirement R3. should be modified at the earliest possible time when the standard is revised. Requirement R3. must be clear that when referring to data specifications it is within the parameters specified in Requirement R1. Consequently, R3 should read: R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship.</p>

**Initial Ballot Comments — Project for IROL Standard — IRO-008-1**

Entity	Segment	Vote	Comment
Lincoln Electric System	3	Negative	Comments: IRO-010-1 R1, R2, & R3 and IRO-008-1. The Standard Drafting Team has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now. LES believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. LES believes that the Interchange transaction data should be added to the new IRO-010-1 R1. LES believes that the data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. LES does agree with removing Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO & BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.
MidAmerican Energy Co.	3	Negative	Interchange transaction data should be added to the standard. Reliability Coordinator should still be required to share reliability data with TOs and BAs.
Alliant Energy Corp. Services, Inc.	4	Negative	Entities should be able to obtain study data upon request to the RC, rather than when expected to take action for an IROL.
AEP Service Corp.	5	Negative	AEP suggests that this standard tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROLs.
FirstEnergy Solutions	5	Affirmative	FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General <ul style="list-style-type: none"> <li>• The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4</li> <li>• There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</li> </ul>
Lincoln Electric System	5	Negative	IRO-010-1 R1, R2, & R3. The Standard Drafting Team has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now.
AEP Marketing	6	Negative	AEP suggests that IRO-010-1 tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROLs.
Bonneville Power	6	Negative	"We do not believe that the IRO-010-1 C.M3 has text that is sufficient to be able to know what is adequate to confirm that we provided data, particularly data such as continually updated ICCP data used for situational

Initial Ballot Comments — Project for IROL Standard — IRO-008-1

Entity	Segment	Vote	Comment
Administration			awareness and using on-line reliability tools.â
Entergy Services, Inc.	6	Affirmative	Agree with the content changes, however the format of the Requirements deleted in other standards has resulted in a reassignment of Requirement numbering and thus created an undesirable administrative/logistical situation of entities having to revise associations with Requirement numbers to Requirement verbiage. This also applies to NERC processes as well since, for example, a reference "R2" in an RSAW or a matrix may now be skewed and really be "R1 or R3" if a Requirement was deleted or added.
FirstEnergy Solutions	6	Affirmative	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General</p> <ul style="list-style-type: none"> <li>• The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4</li> <li>• There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</li> </ul>
Lincoln Electric System	6	Negative	IRO-010-1 R1, R2, & R3 and IRO-008-1. The Standard Drafting Team has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now. LES believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. LES believes that the Interchange transaction data should be added to the new IRO-010-1 R1. LES believes that the data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. LES does agree with removing Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO & BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.
Midwest Reliability Organization	10	Negative	For the MRO comments: IRO-010-1 R1, R2, & R3 and IRO-008-1, the SDT have taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now. The MRO believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. The MRO believes that the Interchange transaction data should be added to the new IRO-010-1 R1. The MRO believes that the data requirements will be more detailed in this new standard; however, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. The MRO does not agree with removing

**Initial Ballot Comments — Project for IROL Standard — IRO-008-1**

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Entity	Segment	Vote	Comment
			Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO & BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.

## Consideration of Comments on Initial Ballot of IRO-008 – Reliability Coordinator Operational Analyses and Real-time Assessments

**Summary Consideration:** The drafting team corrected the typographical error in the red line version of IRO-004 – it showed “R7” instead of “R1”.

The SDT also updated the references in the measures for IRO-005 to ensure they reference the correct requirements, using the new requirement numbers.

The drafting team did not make any other modifications based on comments submitted with the initial ballot for this standard.

<b>Organization:</b>	Duke Energy Carolina
<b>Member:</b>	Douglas E. Hils
<b>Comment:</b>	<p>Duke Energy appreciates the opportunity to vote and comment on IRO-008-1. The proposed standard introduces a new defined term “Operational Planning Analysis”, which states that an analysis of the expected system conditions for the next day’s operation may be performed either a day ahead or as much as 12 months ahead. Duke Energy believes that allowing a year is too long.</p> <p>IRO-008-1, IRO-009-1 and IRO-010-1 all introduce new terms that are not defined in the NERC Glossary. “Operations Planning”, “Same Day Operations” and “Real-time Operations” are used to identify time horizons for requirements.</p>
<b>Response:</b>	<p>In the Functional Model, the distinction between planning for operations and planning for system additions is the “one year” mark. The proposed definition for Operational Planning Analysis was supported by most commenters.</p> <p>The definitions used in the “Time Horizons” are not in the NERC Glossary but were posted with the standard when Time Horizons were added to the standard. Here is a link to that comment form:  <a href="http://www.nerc.com/docs/standards/sar/IROL_Comment_Form_02Jan07.doc">http://www.nerc.com/docs/standards/sar/IROL_Comment_Form_02Jan07.doc</a></p> <p>Note that the definitions for the terms used in defining “Time Horizons” have been posted for stakeholder reference when each drafting team has added “Time Horizons” to requirements. Here are the definitions:</p> <ul style="list-style-type: none"> <li>- Long-term Planning: a planning horizon of one year or longer.</li> <li>- Operations Planning: operating and resource plans from day-ahead up to and including seasonal.</li> <li>- Same-day Operations: routine actions required within the timeframe of a day, but not real-time.</li> <li>- Real-time Operations: actions required within one hour or less to preserve the reliability of the bulk</li> </ul>



**Consideration of Comments on Initial Ballot of IRO-008 – Reliability Coordinator Operational Analyses and Real-time Assessments**

	<p>electric system.</p> <ul style="list-style-type: none"> <li>- Operations Assessment: follow-up evaluations and reporting of real time operations.</li> </ul>
<b>Organization:</b>	Great River Energy
<b>Member:</b>	Gordon Pietsch
<b>Comment:</b>	GRE recognizes the need to have measurable requirements. However, it is GRE's opinion that the revised IRO-008-1_R1 language does not adequately address the need for the Reliability Coordinator to pay attention to how the actions they take for their area can affect their neighboring Reliability Coordinator areas. GRE recommends that measurable language that addressing this be added back into the standard.
<b>Response:</b>	<p>Stakeholder consensus is that R2 in IRO-004-1 is un-measurable - it is difficult to measure terms such as, "pay particular attention to" or "undue burden" in an objective manner.</p> <p>Project 2006-06 - Reliability Coordination addresses requirements for coordination between Reliability Coordinators. There is an existing set of requirements (IRO-014-2) for Reliability Coordinators to coordinate with their actions with other Reliability Coordinators. In addition, there are other requirements for the Reliability Coordinator to coordinate with other Reliability Coordinators.</p>
<b>Organization:</b>	FirstEnergy Energy Delivery, FirstEnergy Solutions
<b>Member:</b>	Robert Martinko, Joanne Kathleen Borrell, Kenneth Dresner, Mark S Travaglianti
<b>Comment:</b>	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-008-1 and ask that the SDT consider our enclosed comments.</p> <p>Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006:</p> <p>General – The Violation Risk Factors should be added to the text of all of the standards.</p> <p>IRO-004 - VSL table shows "R7" instead of "R1"</p> <p>IRO-005 - Several Measures reference the incorrect requirement numbers</p> <p>TOP-003 - R4 – There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</p>
<b>Response:</b>	<p>VRFs will be added to all approved standards as part of another administrative activity.</p> <p>The 'redline' version of IRO-004 did show R7 instead of R1 for the VSL and this has been corrected.</p> <p>The SDT has updated the references in the measures for IRO-005 to ensure they reference the correct requirements, using the new requirement numbers.</p>

**Consideration of Comments on Initial Ballot of IRO-008 – Reliability Coordinator Operational Analyses and Real-time Assessments**

	The SDT is limited in what it can modify in TOP-003. The modifications are limited to revisions and retirements associated with the requirements in the new standards. Other modifications, such as adding missing measures or modifying compliance information, will be addressed by other drafting teams.
<b>Organization:</b>	Lincoln Electric System
<b>Member:</b>	Bruce Merrill, Eric Ruskamp
<b>Comment:</b>	IRO-008-1 and IRO-010-1 R1, R2, & R3. The SDT has taken away the ability of entities to obtain study data from the RC unless the entitie's area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they do now.
<b>Response:</b>	Note that the implementation plan for IRO-008 only calls for retirement of IRO-004-1, Requirements R1 and R2 – and these requirements do not address data. The comment provided is relevant only to the ballot for IRO-010-1, and is not relevant to the ballot for IRO-008-1. IRO-010-1 does not preclude LES or any other entity from asking for and obtaining data. To the extent the Reliability Coordinator is held accountable for any and all IROLs then the Reliability Coordinator <b>must</b> get what data it needs. If other entities need study data, then this should be addressed in a corollary standard.
<b>Organization:</b>	MidAmerican Energy Co.
<b>Member:</b>	Thomas C. Mielnik
<b>Comment:</b>	Unacceptable or undue Burden requirement needs to be clarified.
<b>Response:</b>	This ballot is for the approval of IRO-008-1 and for the retirement of Requirements R1 and R2 in IRO-004-1 — Reliability Coordination – Operations Planning. The drafting team is not proposing any requirements that include the phrase, “unacceptable or undue burden.”
<b>Organization:</b>	Entergy Services, Inc.
<b>Member:</b>	William Franklin
<b>Comment:</b>	Agree with the content changes, however the format of the Requirements deleted in other standards has resulted in a reassignment of Requirement numbering and thus created an undesirable administrative/logistical situation of entities having to revise associations with Requirement numbers to Requirement verbiage. This also applies to NERC processes as well since, for example, a reference "R2" in an RSAW or a matrix may now be skewed and really be "R1 or R3" if a Requirement was deleted or added.
<b>Response:</b>	This is an administrative issue, outside the drafting team’s scope. The team will forward your comment to

**Consideration of Comments on Initial Ballot of IRO-008 – Reliability Coordinator Operational Analyses and Real-time Assessments**

	the Director of Standards for his consideration.
<b>Organization:</b>	Midwest Reliability Organization
<b>Member:</b>	Larry Brusseau
<b>Comment:</b>	<p>The MRO understands, IRO-004-1 R2 will be retired. Can this requirement be moved to IRO-008-1 (perhaps call it R2)? If this requirement is kept perhaps the "unacceptable or undue Burden" criteria could be clarified. A measurable task would be that the RC has research evidence that it could present plus, it could have measurable evidence like its communication with the local regional reliability organization.</p> <p>For the MRO comments: IRO-008-1 and IRO-010-1 R1, R2, &amp; R3, the SDT have taken away the ability of entities to obtain study data from the RC unless entities area is specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now.</p>
<b>Response:</b>	<p>The implementation plan for IRO-008-1 does include the retirement of IRO-004-1 Requirements R1 and R2. Requirement R2 states:</p> <p style="padding-left: 40px;">Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p> <p>Stakeholder consensus is that R2 in IRO-004-1 is un-measurable - it is difficult to measure terms such as, "pay particular attention to" or "undue burden" in an objective manner.</p> <p>Project 2006-06 - Reliability Coordination addresses requirements for coordination between Reliability Coordinators. There is an existing set of requirements (IRO-014-2) for Reliability Coordinators to coordinate with their actions with other Reliability Coordinators. In addition, there are other requirements for the Reliability Coordinator to coordinate with other Reliability Coordinators.</p>
<b>Organization:</b>	Minnesota Power, Inc.
<b>Member:</b>	Carol Gerou
<b>Comment:</b>	<p>1. On page 7 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R1 and R2 while the proposed replacement requirement is IRO-008-1 R1. From what Minnesota Power understands, IRO-004-1 R2 will be retired. Why couldn't this requirement be moved to IRO-008-1 (perhaps call it R2)? If this requirement is kept perhaps the "unacceptable or undue Burden" criteria could be clarified. A measurable task would be that the RC has research evidence that it could present plus, it could have measurable evidence like its communication with the local regional reliability organization.</p> <p>2. On page 10 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability</p>

**Consideration of Comments on Initial Ballot of IRO-008 – Reliability Coordinator Operational Analyses and Real-time Assessments**

	<p>Operating Limits Standards”, the already approved standard requirements are IRO-004-1 R4 &amp; R5 and IRO-005-2 R2 while the proposed replacement requirements are IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3. Minnesota Power’s comment to IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3 is, “The SDT has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now.”</p>
<p><b>Response:</b></p>	<p>Project 2006-06 - Reliability Coordination addresses coordination between Reliability Coordinators. There is an existing set of requirements (IRO-014-2) for Reliability Coordinators to coordinate with their actions with other Reliability Coordinators. Stakeholder consensus is that R2 in IRO-004 is un-measurable - it is difficult to measure terms such as, "pay particular attention to" in an objective manner. In addition, there are other requirements for the Reliability Coordinator to coordinate with other Reliability Coordinators.</p> <p>These IRO standards do not preclude MP or any other entity from asking for and obtaining data. To the extent the Reliability Coordinator is held accountable for any and all IROLs then the Reliability Coordinator must get what data it needs. If the Transmission Operator and Balancing Authority need study data, then this should be addressed in a corollary standard. A Balancing Authority has no study functions regarding IROLS, the only involvement of a Balancing Authority with IROLs is to follow the directive of its Transmission Operators and Reliability Coordinator.</p>



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Ballot Results	
<b>Ballot Name:</b>	IROL Standard - IRO-009_in
<b>Ballot Period:</b>	7/21/2008 - 7/30/2008
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	176
<b>Total Ballot Pool:</b>	190
<b>Quorum:</b>	<b>92.63 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	89.44 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote	
			# Votes	Fraction	# Votes	Fraction	# Votes		
1 - Segment 1.		56	1	44	0.88	6	0.12	2	4
2 - Segment 2.		9	0.8	8	0.8	0	0	0	1
3 - Segment 3.		46	1	33	0.868	5	0.132	6	2
4 - Segment 4.		8	0.8	6	0.6	2	0.2	0	0
5 - Segment 5.		32	1	26	0.897	3	0.103	0	3
6 - Segment 6.		21	1	17	0.895	2	0.105	0	2
7 - Segment 7.		1	0	0	0	0	0	0	1
8 - Segment 8.		3	0.3	3	0.3	0	0	0	0
9 - Segment 9.		7	0.6	6	0.6	0	0	0	1
10 - Segment 10.		7	0.7	6	0.6	1	0.1	0	0
<b>Totals</b>		<b>190</b>	<b>7.2</b>	<b>149</b>	<b>6.44</b>	<b>19</b>	<b>0.76</b>	<b>8</b>	<b>14</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Ameren Services Company	Kirit S. Shah	Affirmative	<a href="#">View</a>
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Basin Electric Power Cooperative	David Rudolph	Negative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Central Maine Power Company	Brian Conroy		
1	Consolidated Edison Co. of New York	Edwin E. Thompson PE	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils	Negative	<a href="#">View</a>
1	E.ON U.S. LLC	Larry Monday	Affirmative	
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	

1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Negative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	<a href="#">View</a>
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Hydro-Quebec TransEnergie	Julien Gagnon	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	
1	Lincoln Electric System	Doug Bantam	Negative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Negative	<a href="#">View</a>
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Orlando Utilities Commission	Brad Chase	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Platte River Power Authority	John C Collins	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Abstain	
1	Sacramento Municipal Utility District	Dilip Mahendra	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Christopher M. Turner	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Tampa Electric Co.	Thomas J. Szelistowski	Affirmative	
1	Tennessee Valley Authority	Larry Akens	Affirmative	
1	Tucson Electric Power Co.	Ronald P. Belval		
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Western Farmers Electric Coop.	Alan Derichsweiler		
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee		
2	British Columbia Transmission Corporation	Phil Park	Affirmative	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Affirmative	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services Company	Mark Peters	Abstain	

3	American Electric Power	Raj Rana	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Avista Corp.	Robert Lafferty	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy	David A. Lapinski	Negative	<a href="#">View</a>
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Negative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Abstain	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Negative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	North Carolina Municipal Power Agency #1	Denise Roeder	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Abstain	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Tampa Electric Co.	Ronald L. Donahey		
3	Tennessee Valley Authority	Cynthia Herron		
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Negative	<a href="#">View</a>
4	Consumers Energy	David Frank Ronk	Negative	<a href="#">View</a>
4	Florida Municipal Power Agency	Ralph Anderson	Affirmative	
4	Northern California Power Agency	Fred E. Young	Affirmative	
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Negative	<a href="#">View</a>
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	

5	Conectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative	
5	Florida Power & Light Co.	Robert A. Birch	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florom	Negative	<a href="#">View</a>
5	Louisville Gas and Electric Co.	Charlie Martin	Affirmative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Orlando Utilities Commission	Richard Kinas	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern California Edison Co.	David Schiada	Affirmative	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tampa Electric Co.	Frank L Busot		
5	Tenaska, Inc.	Scott M. Helyer	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer		
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Entergy Services, Inc.	William Franklin	Affirmative	<a href="#">View</a>
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb		
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent	Affirmative	
8	Volkman Consulting	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney		



9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Philip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Negative	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Carter B Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

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Entity	Segment	Vote	Comment
Ameren Services Company	1	Affirmative	Include Measurement for each requirement; that is, M1 for R1 and M2 for R2, etc.
Duke Energy Carolina	1	Negative	Duke Energy appreciates the opportunity to vote and comment on this proposed Standard. IRO-009-1 Requirements R1 and R3 indicate that actions shall be implemented to prevent exceeding an IROL. This is an issue of much debate currently within the industry — whether or not IROLs may be exceeded with or without a contingency. It's unclear whether these requirements are consistent with current industry practice. The VSL for IRO-009-1 Requirement R4 introduces a new requirement that an operator document within five minutes of exceeding an IROL that some action was taken to mitigate the magnitude and duration of the event. While we agree with R4 that the operator should act without delay to mitigate the event, we are concerned that this five minute documentation requirement could distract the operator. IRO-008-1, IRO-009-1 and IRO-010-1 all introduce new terms that are not defined in the NERC Glossary. "Operations Planning", "Same Day Operations" and "Real-time Operations" are used to identify time horizons for requirements.
FirstEnergy Energy Delivery	1	Affirmative	FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-009-1 and ask that the SDT consider our enclosed comments. Requirements R1 and R2 FirstEnergy suggests that the SDT consider the proposed edits to requirements R1 and R2 as shown below to address a potential unintended interpretation of the requirements. We believe the suggested changes remove a level of ambiguity that presently exists and helps clarify the SDT's desired outcome. In requirements R1 and R2 the text uses the phrase "For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day ...". Our concern is that the wording "one or more days" is unlimited in timeframe and when performing month ahead, week ahead reviews of requested planned maintenance outages there may be potential IROL conditions identified for system configurations that in actuality never make it to the operating day, based on one or more planned outage requests being denied. Conversely, there may be instances within the day prior to the next operating day, where unexpected forced outages of bulk power facilities trigger the need for re-study. Therefore, it should be clear that the only documented Operating Processes, Procedures, or Plans that are in effect and required by the standard should reflect the most recent system information available prior to the start of the current operating day. FE assumes that there is no expectation that any and all "hypothetical" system configurations reviewed by the Reliability Coordinator would be the basis of any documented Operating Processes, Procedures, or Plans. The standard should be clear in its intent to require IROL mitigation plans be in place based on the most recent projected operating conditions for the next operating day. Therefore, we suggest the addition of the proposed sub-requirement R1.1 and that R2 be deleted and covered by our proposed sub-requirement R1.2. If adopted, some adjustments will also be needed in the text of measures and VSLs. Thank you for your consideration. R1 For each IROL (in its Reliability Coordinator Area) that

Initial Ballot Comments — Project for IROL Standard — IRO-009-1

Entity	Segment	Vote	Comment
			<p>the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. R1.1 The applicable Operating Processes, Procedures, or Plans in effect shall be revised as needed during the 24-hour period preceding the start of the current day period to reflect up to date projected system conditions. R1.2 The applicable Operating Processes, Procedures, or Plans in effect shall mitigate the magnitude and duration of exceeding an IROL such that the IROL is relieved within the IROL's Tv. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General "The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4 " There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</p>
Great River Energy	1	Negative	<p>GRE does not agree with the removal of the references to coordinating with the TOP and BA. GRE understands that under some instances the Reliability Coordinator may not have time to coordinate with the TOP and/or the BA. GRE recommends that the SDT add language that would acknowledge that this coordination must take place during the Operations Planning Time Horizon. In addition, the revised language does not make it sufficiently clear that the BA and TOP in conjunction with the Reliability Coordinator need to be involved in the development of IROL mitigation plans for their systems.</p>
Minnesota Power, Inc.	1	Negative	<p>1. On page 8 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R3 &amp; R6 while the proposed replacement requirements are IRO-009-1 R1, R2, &amp; R3. Minnesota Power's comment to IRO-009-1 R2 is, "Any reference to coordinating with the TOP's and BA's has been removed. The TOP's and BA's have the most knowledge of their systems, and Minnesota Power believes they should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's."</p> <p>2. On page 8 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R3 &amp; R6 while the proposed replacement requirements are IRO-009-1 R1, R2, &amp; R3. Minnesota Power's comment to IRO-009-1 R3 is, "the SDT has removed references to directing the TOP, BA, and TSP to take actions. Minnesota Power believes this should remain."</p>
Consumers Energy	3	Negative	<p>IRO-009-1 discusses having plans or procedures in place when an IROL violation is forecasted before the fact. No where in the Standard does it direct the Reliability Coordinator to inform or communicate with facilities that may be part of such plans or procedures. Failure to coordinate with such facilities could easily invalidate the plans or procedures the RC is putting in place. Generation owners may schedule work or actions at a facility that would render the facility ineffectual if the RC actually implements the plan. No plan is complete without coordination.</p>

Initial Ballot Comments — Project for IROL Standard — IRO-009-1

Entity	Segment	Vote	Comment
FirstEnergy Solutions	3	Affirmative	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-009-1 and ask that the SDT consider our enclosed comments. Requirements R1 and R2 FirstEnergy suggests that the SDT consider the proposed edits to requirements R1 and R2 as shown below to address a potential unintended interpretation of the requirements. We believe the suggested changes remove a level of ambiguity that presently exists and helps clarify the SDT's desired outcome. In requirements R1 and R2 the text uses the phrase "For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day ...". Our concern is that the wording "one or more days" is unlimited in timeframe and when performing month ahead, week ahead reviews of requested planned maintenance outages there may be potential IROL conditions identified for system configurations that in actuality never make it to the operating day, based on one or more planned outage requests being denied. Conversely, there may be instances within the day prior to the next operating day, where unexpected forced outages of bulk power facilities trigger the need for re-study. Therefore, it should be clear that the only documented Operating Processes, Procedures, or Plans that are in effect and required by the standard should reflect the most recent system information available prior to the start of the current operating day. FE assumes that there is no expectation that any and all "hypothetical" system configurations reviewed by the Reliability Coordinator would be the basis of any documented Operating Processes, Procedures, or Plans. The standard should be clear in its intent to require IROL mitigation plans be in place based on the most recent projected operating conditions for the next operating day. Therefore, we suggest the addition of the proposed sub-requirement R1.1 and that R2 be deleted and covered by our proposed sub-requirement R1.2. If adopted, some adjustments will also be needed in the text of measures and VSLs. Thank you for your consideration. R1 For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. R1.1 The applicable Operating Processes, Procedures, or Plans in effect shall be revised as needed during the 24-hour period preceding the start of the current day period to reflect up to date projected system conditions. R1.2 The applicable Operating Processes, Procedures, or Plans in effect shall mitigate the magnitude and duration of exceeding an IROL such that the IROL is relieved within the IROL's Tv. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General — The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4 — There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</p>
Lincoln Electric System	3	Negative	<p>LES does not agree with the removal of the references to coordinating with the Transmission Operators (TOP's) and Balancing Authorities (BA's). The TOP's and BA's have the most knowledge</p>

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Entity	Segment	Vote	Comment
			of their systems, and LES would think the TOP's and BA's should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's. LES does not agree with the removal of references directing the TOP, BA, and Transmission Service Provider (TSP) to take actions.
MidAmerican Energy Co.	3	Negative	Reference to coordinating with TOPs and BAs has been removed from this standard. I believe these entities should be involved in mitigation plans.
Alliant Energy Corp. Services, Inc.	4	Negative	The TOP's and BA's have the most knowledge of their system, and should not be removed from the coordination of mitigation plans.
Consumers Energy	4	Negative	IRO-009-1 discusses having plans or procedures in place when an IROL violation is forecasted before the fact. No where in the Standard does it direct the Reliability Coordinator to inform or communicate with facilities that may be part of such plans or procedures. Failure to coordinate with such facilities could easily invalidate the plans or procedures the RC is putting in place. Generation owners may schedule work or actions at a facility that would render the facility ineffectual if the RC actually implements the plan. No plan is complete without coordination.
City of Tallahassee	5	Negative	R1 and R2 contradict each other. R1 says "to prevent exceeding those IROL". R2 says "to mitigate the magnitude and duration of exceeding that IROL" So R2 says it is okay to violate R1. If that is the case, R1 should not be a standard since it is not needed for the reliability of the BES.
FirstEnergy Solutions	5	Affirmative	FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-009-1 and ask that the SDT consider our enclosed comments. Requirements R1 and R2 FirstEnergy suggests that the SDT consider the proposed edits to requirements R1 and R2 as shown below to address a potential unintended interpretation of the requirements. We believe the suggested changes remove a level of ambiguity that presently exists and helps clarify the SDT's desired outcome. In requirements R1 and R2 the text uses the phrase "For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day ...". Our concern is that the wording "one or more days" is unlimited in timeframe and when performing month ahead, week ahead reviews of requested planned maintenance outages there may be potential IROL conditions identified for system configurations that in actuality never make it to the operating day, based on one or more planned outage requests being denied. Conversely, there may be instances within the day prior to the next operating day, where unexpected forced outages of bulk power facilities trigger the need for re-study. Therefore, it should be clear that the only documented Operating Processes, Procedures, or Plans that are in effect and required by the standard should reflect the most recent system information available prior to the start of the current operating day. FE assumes that there is no expectation that any and all "hypothetical" system configurations reviewed by the Reliability Coordinator would be the basis of any documented Operating Processes, Procedures, or Plans. The standard should be clear in its intent to require IROL mitigation plans be in place based on the most recent projected operating conditions for the next operating day. Therefore, we suggest the addition of the proposed sub-requirement R1.1 and that R2 be deleted and covered by our proposed sub-requirement R1.2. If adopted, some adjustments will also be needed in the text of measures and

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Entity	Segment	Vote	Comment
			<p>VSLs. Thank you for your consideration. R1 For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. R1.1 The applicable Operating Processes, Procedures, or Plans in effect shall be revised as needed during the 24-hour period preceding the start of the current day period to reflect up to date projected system conditions. R1.2 The applicable Operating Processes, Procedures, or Plans in effect shall mitigate the magnitude and duration of exceeding an IROL such that the IROL is relieved within the IROL's Tv. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General</p> <ul style="list-style-type: none"> <li>— The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4</li> <li>— There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</li> </ul>
Lincoln Electric System	5	Negative	<p>LES does not agree with the removal of the references to coordinating with the Transmission Operators (TOP's) and Balancing Authorities (BA's). The TOP's and BA's have the most knowledge of their systems, and LES would think the TOP's and BA's should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's. LES does not agree with the removal of references directing the TOP, BA, and Transmission Service Provider (TSP) to take actions.</p>
Entergy Services, Inc.	6	Affirmative	<p>Agree with the content changes, however the format of the Requirements deleted in other standards has resulted in a reassignment of Requirement numbering and thus created an undesirable administrative/logistical situation of entities having to revise associations with Requirement numbers to Requirement verbiage. This also applies to NERC processes as well since, for example, a reference "R2" in an RSAW or a matrix may now be skewed and really be "R1 or R3" if a Requirement was deleted or added.</p>
FirstEnergy Solutions	6	Affirmative	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-009-1 and ask that the SDT consider our enclosed comments. Requirements R1 and R2 FirstEnergy suggests that the SDT consider the proposed edits to requirements R1 and R2 as shown below to address a potential unintended interpretation of the requirements. We believe the suggested changes remove a level of ambiguity that presently exists and helps clarify the SDT's desired outcome. In requirements R1 and R2 the text uses the phrase "For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day ...". Our concern is that the wording "one or more days" is unlimited in timeframe and when performing month ahead, week ahead reviews of requested planned maintenance outages there may be potential IROL conditions identified for system configurations that in</p>

Entity	Segment	Vote	Comment
			<p>actuality never make it to the operating day, based on one or more planned outage requests being denied. Conversely, there may be instances within the day prior to the next operating day, where unexpected forced outages of bulk power facilities trigger the need for re-study. Therefore, it should be clear that the only documented Operating Processes, Procedures, or Plans that are in effect and required by the standard should reflect the most recent system information available prior to the start of the current operating day. FE assumes that there is no expectation that any and all "hypothetical" system configurations reviewed by the Reliability Coordinator would be the basis of any documented Operating Processes, Procedures, or Plans. The standard should be clear in its intent to require IROL mitigation plans be in place based on the most recent projected operating conditions for the next operating day. Therefore, we suggest the addition of the proposed sub-requirement R1.1 and that R2 be deleted and covered by our proposed sub-requirement R1.2. If adopted, some adjustments will also be needed in the text of measures and VSLs. Thank you for your consideration. R1 For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. R1.1 The applicable Operating Processes, Procedures, or Plans in effect shall be revised as needed during the 24-hour period preceding the start of the current day period to reflect up to date projected system conditions. R1.2 The applicable Operating Processes, Procedures, or Plans in effect shall mitigate the magnitude and duration of exceeding an IROL such that the IROL is relieved within the IROL's Tv. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General "The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4 — There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</p>
Lincoln Electric System	6	Negative	<p>LES does not agree with the removal of the references to coordinating with the Transmission Operators (TOP's) and Balancing Authorities (BA's). The TOP's and BA's have the most knowledge of their systems, and LES would think the TOP's and BA's should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's. LES does not agree with the removal of references directing the TOP, BA, and Transmission Service Provider (TSP) to take actions.</p>
Midwest Reliability Organization	10	Negative	<p>The MRO does not agree with the removal of the references to coordinating with the TOP's and BA's. The TOP's and BA's have the most knowledge of their systems, and the MRO would think the TOP's and BA's should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's. The MRO does not agree with the removal of references directing the TOP, BA, and TSP to take actions.</p>

**Consideration of Comments on Initial Ballot of IRO-009 — Reliability Coordinator Actions to Operate Within IROLs**

**Summary Consideration:** The drafting team corrected the typographical error in the red line version of IRO-004 – it showed “R7” instead of “R1”.  
 The SDT also updated the references in the measures for IRO-005 to ensure they reference the correct requirements, using the new requirement numbers.  
 The drafting team did not make any other modifications based on comments submitted with the initial ballot for this standard.

<b>Organization:</b>	Ameren Services Company
<b>Member:</b>	Kirit S. Shah
<b>Comment:</b>	Include Measurement for each requirement; that is, M1 for R1 and M2 for R2, etc.
<b>Response:</b>	The standards process requires that there be a measurement for each requirement, but does not require that there be a unique measure for each requirement. There are measures for every requirement in IRO-009. The Measures for R1 & R2 are the same; and the measures for R3 & R4 are the same. The associated requirements are specifically identified in the measures.
<b>Organization:</b>	Duke Energy Carolina
<b>Member:</b>	Douglas E. Hils
<b>Comment:</b>	Duke Energy appreciates the opportunity to vote and comment on this proposed Standard. IRO-009-1 Requirements R1 and R3 indicate that actions shall be implemented to prevent exceeding an IROL. This is an issue of much debate currently within the industry – whether or not IROLs may be exceeded with or without a contingency. It’s unclear whether these requirements are consistent with current industry practice. The VSL for IRO-009-1 Requirement R4 introduces a new requirement that an operator document within five minutes of exceeding an IROL that some action was taken to mitigate the magnitude and duration of the event. While we agree with R4 that the operator should act without delay to mitigate the event, we are concerned that this five minute documentation requirement could distract the operator.  IRO-008-1, IRO-009-1 and IRO-010-1 all introduce new terms that are not defined in the NERC Glossary. “Operations Planning”, “Same Day Operations” and “Real-time Operations” are used to identify time horizons for requirements.



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<p><b>Response:</b></p>	<p>There has not been a single proposal that received unanimous approval from the commenters. It is clear that the Industry wants immediate action when the system is over a limit. There is recognition that in the absence of conditions related to R3 (which states that the RC that observes a pending IROL must take action) an operator must be given some finite time to assess the situation. In some cases taking no action is a proper response; in other cases any delay can be catastrophic. The standard mandates “without delay” but the severity is based on having no documented action for more than 5 minutes. Note that if an RC determines that actions already taken will resolve an IROL and no additional actions are needed, the RC can document this using any means available to it – and this would be evidence that the RC had taken action. The documentation does not need to be developed within 5 minutes – there just needs to be evidence that some action was taken within 5 minutes. This was a consensus solution.</p> <p>The definitions used in the “Time Horizons” are not in the NERC Glossary but were posted with the standard when Time Horizons were added to the standard. Here is a link to that comment form: <a href="http://www.nerc.com/docs/standards/sar/IROL_Comment_Form_02Jan07.doc">http://www.nerc.com/docs/standards/sar/IROL_Comment_Form_02Jan07.doc</a></p> <p>Note that the definitions for the terms used in defining “Time Horizons” have been posted for stakeholder reference when each drafting team has added “Time Horizons” to requirements. Here are the definitions:</p> <ul style="list-style-type: none"> <li>- Long-term Planning: a planning horizon of one year or longer.</li> <li>- Operations Planning: operating and resource plans from day-ahead up to and including seasonal.</li> <li>- Same-day Operations: routine actions required within the timeframe of a day, but not real-time.</li> <li>- Real-time Operations: actions required within one hour or less to preserve the reliability of the bulk electric system.</li> <li>- Operations Assessment: follow-up evaluations and reporting of real time operations.</li> </ul>
<p><b>Organization:</b></p>	<p>FirstEnergy Energy Delivery, FirstEnergy Solutions</p>
<p><b>Member:</b></p>	<p>Robert Martinko, Joanne Kathleen Borrell, Kenneth Dresner, Mark S Travaglianti</p>
<p><b>Comment:</b></p>	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-009-1 and ask that the SDT consider our enclosed comments.</p> <p>Requirements R1 and R2 FirstEnergy suggests that the SDT consider the proposed edits to requirements R1 and R2 as shown below to address a potential unintended interpretation of the requirements. We believe the suggested changes remove a level of ambiguity that presently exists and helps clarify the</p>

SDT's desired outcome. In requirements R1 and R2 the text uses the phrase "For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day ...". Our concern is that the wording "one or more days" is unlimited in timeframe and when performing month ahead, week ahead reviews of requested planned maintenance outages there may be potential IROL conditions identified for system configurations that in actuality never make it to the operating day, based on one or more planned outage requests being denied. Conversely, there may be instances within the day prior to the next operating day, where unexpected forced outages of bulk power facilities trigger the need for re-study. Therefore, it should be clear that the only documented Operating Processes, Procedures, or Plans that are in effect and required by the standard should reflect the most recent system information available prior to the start of the current operating day. FE assumes that there is no expectation that any and all "hypothetical" system configurations reviewed by the Reliability Coordinator would be the basis of any documented Operating Processes, Procedures, or Plans. The standard should be clear in its intent to require IROL mitigation plans be in place based on the most recent projected operating conditions for the next operating day. Therefore, we suggest the addition of the proposed sub-requirement R1.1 and that R2 be deleted and covered by our proposed sub-requirement R1.2. If adopted, some adjustments will also be needed in the text of measures and VSLs. Thank you for your consideration.

R1 For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs.

R1.1 The applicable Operating Processes, Procedures, or Plans in effect shall be revised as needed during the 24-hour period preceding the start of the current day period to reflect up to date projected system conditions.

R1.2 The applicable Operating Processes, Procedures, or Plans in effect shall mitigate the magnitude and duration of exceeding an IROL such that the IROL is relieved within the IROL's Tv.

Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General – The Violation Risk Factors should be added to the text of all of the standards.

**Consideration of Comments on Initial Ballot of IRO-009 — Reliability Coordinator Actions to Operate Within IROLs**

	<p>IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 – Several Measures reference the incorrect requirement numbers</p> <p>TOP-003 - R4 – There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</p>
<b>Response:</b>	<p>The SDT has been asked to draft the RSAWs for this set of standards and will include language in the RSAW for IRO-009 to address your comment.</p> <p>The VRFs are in the text of each new standard and will be added to all approved standards as part of another administrative activity.</p> <p>The 'redline' version of IRO-004 did show R7 instead of R1 for the VSL and this has been corrected. The SDT has updated the references in the measures for IRO-005 to ensure they reference the correct requirements, using the new requirement numbers.</p> <p>The scope of this standard did not include revising the compliance elements for TOP standards.</p>
<b>Organization:</b>	Consumers Energy
<b>Member:</b>	David A. Lapinski, David Frank Ronk
<b>Comment:</b>	IRO-009-1 discusses having plans or procedures in place when an IROL violation is forecasted before the fact. No where in the Standard does it direct the Reliability Coordinator to inform or communicate with facilities that may be part of such plans or procedures. Failure to coordinate with such facilities could easily invalidate the plans or procedures the RC is putting in place. Generation owners may schedule work or actions at a facility that would render the facility ineffectual if the RC actually implements the plan. No plan is complete without coordination.
<b>Response:</b>	IRO-008-1 Requirement R3 does require the Reliability Coordinator to share its analysis results with those entities that are expected to take associated actions.
<b>Organization:</b>	Great River Energy
<b>Member:</b>	Gordon Pietsch
<b>Comment:</b>	GRE does not agree with the removal of the references to coordinating with the TOP and BA. GRE

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	understands that under some instances the Reliability Coordinator may not have time to coordinate with the TOP and/or the BA. GRE recommends that the SDT add language that would acknowledge that this coordination must take place during the Operations Planning Time Horizon. In addition, the revised language does not make it sufficiently clear that the BA and TOP in conjunction with the Reliability Coordinator need to be involved in the development of IROL mitigation plans for their systems.
<b>Response:</b>	The use of the word, “coordination” is ambiguous and puts the Reliability Coordinator in a position where its authority is not clear. The Reliability Coordinator is not granted any excuse for failing to do whatever it needs to do to ensure that IROL-related action plans are in place. The standard does not preclude the Reliability Coordinator from coordinating with other entities.
<b>Organization:</b>	MidAmerican Energy Co.
<b>Member:</b>	Thomas C. Mielnik
<b>Comment:</b>	Reference to coordinating with TOPs and BAs has been removed from this standard. I believe these entities should be involved in mitigation plans.
<b>Response:</b>	The use of the word, “coordination” is ambiguous and puts the Reliability Coordinator in a position where its authority is not clear. The Reliability Coordinator is not granted any excuse for failing to do whatever it needs to do to ensure that IROL-related action plans are in place. The standard does not preclude the Reliability Coordinator from coordinating with other entities.
<b>Organization:</b>	Alliant Energy Corp. Services, Inc.
<b>Member:</b>	Kenneth Goldsmith
<b>Comment:</b>	The TOP's and BA's have the most knowledge of their system, and should not be removed from the coordination of mitigation plans.
<b>Response:</b>	The use of the word, “coordination” is ambiguous and puts the Reliability Coordinator in a position where its authority is not clear. The Reliability Coordinator is not granted any excuse for failing to do whatever it needs to do to ensure that IROL-related action plans are in place. The standard does not preclude the Reliability Coordinator from coordinating with other entities.
<b>Organization:</b>	Midwest Reliability Organization
<b>Member:</b>	Larry Brusseau

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<b>Comment:</b>	The MRO does not agree with the removal of the references to coordinating with the TOP's and BA's. The TOP's and BA's have the most knowledge of their systems, and the MRO would think the TOP's and BA's should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's. The MRO does not agree with the removal of references directing the TOP, BA, and TSP to take actions.
<b>Response:</b>	The use of the word, "coordination" is ambiguous and puts the Reliability Coordinator in a position where its authority is not clear. The Reliability Coordinator is not granted any excuse for failing to do whatever it needs to do to ensure that IROL-related action plans are in place. The standard does not preclude the Reliability Coordinator from coordinating with other entities.
<b>Organization:</b>	Lincoln Electric System
<b>Member:</b>	Bruce Merrill, Eric Ruskamp
<b>Comment:</b>	LES does not agree with the removal of the references to coordinating with the Transmission Operators (TOP's) and Balancing Authorities (BA's). The TOP's and BA's have the most knowledge of their systems, and LES would think the TOP's and BA's should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's. LES does not agree with the removal of references directing the TOP, BA, and Transmission Service Provider (TSP) to take actions.
<b>Response:</b>	The use of the word, "coordination" is ambiguous and puts the Reliability Coordinator in a position where its authority is not clear. The Reliability Coordinator is not granted any excuse for failing to do whatever it needs to do to ensure that IROL-related action plans are in place. The standard does not preclude the Reliability Coordinator from coordinating with other entities. The Reliability Coordinator is the functional entity responsible for identifying IROLs, not the Transmission Operator or the Balancing Authority. The Balancing Authority is not required to have transmission monitoring capability. TOP-001-1 Requirement R3 requires the TOP, BA and Generator Operator to comply with the Reliability Coordinator's directives.
<b>Organization:</b>	City of Tallahassee
<b>Member:</b>	Alan Gale
<b>Comment:</b>	R1 and R2 contradict each other. R1 says "...to prevent exceeding those IROL's". R2 says "...to mitigate the magnitude and duration of exceeding that IROL..." So R2 says it is okay to violate R1. If that is the

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	case, R1 should not be a standard since it is not needed for the reliability of the BES.
<b>Response:</b>	There is no contradiction between R1 and R2. R2 recognizes that not all IROLs can be avoided.
<b>Organization:</b>	Entergy Services, Inc.
<b>Member:</b>	William Franklin
<b>Comment:</b>	Agree with the content changes, however the format of the Requirements deleted in other standards has resulted in a reassignment of Requirement numbering and thus created an undesirable administrative/logistical situation of entities having to revise associations with Requirement numbers to Requirement verbiage. This also applies to NERC processes as well since, for example, a reference "R2" in an RSAW or a matrix may now be skewed and really be "R1 or R3" if a Requirement was deleted or added.
<b>Response:</b>	This is an administrative issue, outside the drafting team's scope. The team will forward your comment to the Director of Standards for his consideration.
<b>Organization:</b>	Minnesota Power, Inc.
<b>Member:</b>	Carol Gerou
<b>Comment:</b>	<p>1. On page 8 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R3 &amp; R6 while the proposed replacement requirements are IRO-009-1 R1, R2, &amp; R3. Minnesota Power's comment to IRO-009-1 R2 is, "Any reference to coordinating with the TOP's and BA's has been removed. The TOP's and BA's have the most knowledge of their systems, and Minnesota Power believes they should be involved in mitigation plans, which would include plans for load shedding. They are also the first to be aware of any new SOL's or IROL's."</p> <p>2. On page 8 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R3 &amp; R6 while the proposed replacement requirements are IRO-009-1 R1, R2, &amp; R3. Minnesota Power's comment to IRO-009-1 R3 is, "the SDT has removed references to directing the TOP, BA, and TSP to take actions. Minnesota Power believes this should remain."</p>
<b>Response:</b>	The use of the word, "coordination" is ambiguous and puts the Reliability Coordinator in a position where its authority is not clear. The Reliability Coordinator is not granted any excuse for failing to do whatever it needs to do to ensure that IROL-related action plans are in place.

## Consideration of Comments on Initial Ballot of IRO-009 — Reliability Coordinator Actions to Operate Within IROLs

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	<p>The standard does not preclude the Reliability Coordinator from coordinating with other entities. The Reliability Coordinator is the functional entity responsible for identifying IROLs, not the Transmission Operator or the Balancing Authority. The Balancing Authority is not required to have transmission monitoring capability.</p> <p>IRO-009-1 R3 and R4 require the Reliability Coordinator to act and these actions may include issuing directives to other entities. TOP-001-1 Requirement R3 requires the TOP, BA and Generator Operator to comply with the Reliability Coordinator's directives.</p>
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Ballot Results	
<b>Ballot Name:</b>	IROL Standard - IRO-010_in
<b>Ballot Period:</b>	7/21/2008 - 7/30/2008
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	178
<b>Total Ballot Pool:</b>	192
<b>Quorum:</b>	<b>92.71 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	88.40 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote	
			# Votes	Fraction	# Votes	Fraction	# Votes		
1 - Segment 1.		58	1	44	0.846	8	0.154	2	4
2 - Segment 2.		9	0.8	8	0.8	0	0	0	1
3 - Segment 3.		46	1	33	0.868	5	0.132	6	2
4 - Segment 4.		8	0.8	7	0.7	1	0.1	0	0
5 - Segment 5.		32	1	25	0.862	4	0.138	0	3
6 - Segment 6.		21	1	15	0.789	4	0.211	0	2
7 - Segment 7.		1	0	0	0	0	0	0	1
8 - Segment 8.		3	0.3	3	0.3	0	0	0	0
9 - Segment 9.		7	0.6	6	0.6	0	0	0	1
10 - Segment 10.		7	0.7	6	0.6	1	0.1	0	0
<b>Totals</b>		<b>192</b>	<b>7.2</b>	<b>147</b>	<b>6.365</b>	<b>23</b>	<b>0.835</b>	<b>8</b>	<b>14</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Ameren Services Company	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Negative	<a href="#">View</a>
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Basin Electric Power Cooperative	David Rudolph	Negative	
1	Bonneville Power Administration	Donald S. Watkins	Negative	<a href="#">View</a>
1	Central Maine Power Company	Brian Conroy		
1	Consolidated Edison Co. of New York	Edwin E. Thompson PE	Affirmative	
1	Dairyland Power Coop.	Robert W. Roddy	Affirmative	
1	Duke Energy Carolina	Douglas E. Hills	Negative	<a href="#">View</a>
1	E.ON U.S. LLC	Larry Monday	Affirmative	
1	East Kentucky Power Coop.	George S. Carruba		



1	Entergy Corporation	George R. Bartlett	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Negative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	<a href="#">View</a>
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	<a href="#">View</a>
1	Hydro-Quebec TransEnergie	Julien Gagnon	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	
1	Lincoln Electric System	Doug Bantam	Negative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Negative	<a href="#">View</a>
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	<a href="#">View</a>
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	<a href="#">View</a>
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Orange and Rockland Utilities, Inc.	Edward Bedder	Affirmative	
1	Orlando Utilities Commission	Brad Chase	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Platte River Power Authority	John C Collins	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Abstain	
1	Sacramento Municipal Utility District	Dilip Mahendra	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Christopher M. Turner	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Tampa Electric Co.	Thomas J. Szelistowski	Affirmative	
1	Tennessee Valley Authority	Larry Akens	Affirmative	
1	Tucson Electric Power Co.	Ronald P. Belval		
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Western Farmers Electric Coop.	Alan Derichsweiler		
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee		
2	British Columbia Transmission Corporation	Phil Park	Affirmative	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Affirmative	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	

3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services Company	Mark Peters	Abstain	
3	American Electric Power	Raj Rana	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Avista Corp.	Robert Lafferty	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Negative	<a href="#">View</a>
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	<a href="#">View</a>
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Negative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Abstain	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Negative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	<a href="#">View</a>
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	North Carolina Municipal Power Agency #1	Denise Roeder	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Abstain	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Tampa Electric Co.	Ronald L. Donahey		
3	Tennessee Valley Authority	Cynthia Herron		
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Negative	<a href="#">View</a>
4	Consumers Energy	David Frank Ronk	Affirmative	
4	Florida Municipal Power Agency	Ralph Anderson	Affirmative	
4	Northern California Power Agency	Fred E. Young	Affirmative	
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Negative	<a href="#">View</a>
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Negative	

5	City of Tallahassee	Alan Gale	Affirmative	
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	
5	Conectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative	
5	Florida Power & Light Co.	Robert A. Birch	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florom	Negative	<a href="#">View</a>
5	Louisville Gas and Electric Co.	Charlie Martin	Affirmative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Orlando Utilities Commission	Richard Kinas	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern California Edison Co.	David Schiada	Affirmative	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tampa Electric Co.	Frank L Busot		
5	Tenaska, Inc.	Scott M. Helyer	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer		
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Marketing	Edward P. Cox	Negative	<a href="#">View</a>
6	Bonneville Power Administration	Brenda S. Anderson	Negative	<a href="#">View</a>
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Entergy Services, Inc.	William Franklin	Affirmative	<a href="#">View</a>
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb		
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent	Affirmative	
8	Volkman Consulting	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	

9	National Association of Regulatory Utility Commissioners	Diane J. Barney		
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Philip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Negative	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Carter B Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

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Initial Ballot Comments — Project for IROL Standard — IRO-010-1

Entity	Segment	Vote	Comment
American Electric Power	1	Negative	AEP votes No. this proposed Standard calls for the Reliability Coordinator to specify the real-time data and information they require to support real-time monitoring, operational planning analyses, and real-time assessments without restriction. This allows for the Reliability Coordinator to ask for the addition of a significant amount of SCADA installations at the expense of the transmission owners in transmission areas that are not pertinent to the purpose of IRO-010-1 which is preventing the instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection. The Standard should tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROLs.
Bonneville Power Administration	1	Negative	We do not believe that the IRO-010-1 C.M3 has text that is sufficient to be able to know what is adequate to confirm that we provided data, particularly data such as continually updated ICCP data used for situational awareness and using on-line reliability tools.
Duke Energy Carolina	1	Negative	Duke Energy appreciates the opportunity to vote and comment on this proposed Standard. IRO-010-1 Requirement R3 requires that "Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship". We are unsure what the phrase "with which it has a reliability relationship" means. IRO-008-1, IRO-009-1 and IRO-010-1 all introduce new terms that are not defined in the NERC Glossary. "Operations Planning", "Same Day Operations" and "Real-time Operations" are used to identify time horizons for requirements.
FirstEnergy Energy Delivery	1	Affirmative	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General</p> <ul style="list-style-type: none"> <li>- The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4</li> <li>- There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</li> </ul>
Great River Energy	1	Negative	IRO-010 does a good job of stating the requirements of the Reliability Coordinator. However, the standard gives the appearance of having taken away the TOP and BA ability to obtain study data from the RC unless they are specifically involved with the mitigation of an IROL. It is GRE's opinion that entities should be able to obtain data from the Reliability Coordinator upon request as they are able to now. GRE understands that the Reliability Coordinator's responsibility to share data was moved in part to IRO-008-1_R3. The new requirement however does not make is sufficiently transparent that the TOP and BA can request the Assessment results if they choose.

**Initial Ballot Comments — Project for IROL Standard — IRO-010-1**

Hydro One Networks, Inc.	1	Affirmative	Hydro One Networks is casting an affirmative vote on the IRO-010 Standard. However, we believe that Requirement R3. should be modified at the earliest possible time when the standard is revised. Requirement R3. must be clear that when referring to data specifications it is within the parameters specified in Requirement R1. Consequently, R3 should read: R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship.
Minnesota Power, Inc.	1	Negative	<p>1. On page 10 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R4 &amp; R5 and IRO-005-2 R2 while the proposed replacement requirements are IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3. Minnesota Power's comment to IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3 is, "The SDT has taken away the ability of entities to obtain study data from the RC unless entities are specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now."</p> <p>2. On page 18 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-003-0 R1 while the proposed replacement requirements are IRO-010-1 R1, R2, &amp; R3. Minnesota Power's comment is, "Minnesota Power believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer."</p> <p>3. On page 19 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-005-0 R1 while the proposed replacement requirement is IRO-010-1 R1. Minnesota Power's comment is, "Interchange transaction data should be added to the new IRO-010-1 R1."</p> <p>4. On page 20 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-005-1 Attachment 1-TOP-005-0 Electric System Data Reliability Data while the proposed replacement requirement is IRO-010-1 R3. Minnesota Power's comment is, "Agree — Data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TOs and BAs. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1"</p> <p>5. On page 22 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-006-1 R4 while the proposed replacement requirement is IRO-010-1 R1 R2, &amp; R3. Minnesota Power's comment to TOP-006-1 R4 is, Minnesota Power don't agree with removing reliability coordinator from the requirement.</p> <p>–Including the Reliability Coordinator in the statement that the RC, TO &amp; BAs shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides</p>

**Initial Ballot Comments — Project for IROL Standard — IRO-010-1**

			clarity.”
National Grid	1	Affirmative	National Grid agrees with the comments suggested by NPCC with regard to Requirement R3. We suggest that the wording be revised at a later date to include a reference to Requirement R1. The suggested wording is as follows:  “R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship. (Violation Risk Factor: Medium) (Time Horizon: Operations Planning; Same-day Operations; Real-time Operations).”
Northeast Utilities	1	Affirmative	Insert in R3, "as specified in R1," after "... shall provide data and information, ...".
Bonneville Power Administration	3	Negative	BPA does not believe that the IRO-010-1 C.M3 has text that is sufficient to be able to know what is adequate to confirm that we provided data, particularly data such as continually updated ICCP data used for situational awareness and using on-line reliability tools
Consolidated Edison Co. of New York	3	Affirmative	R3 may be revised at a later date to include a reference to R1 as follows: “R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship. (Violation Risk Factor: Medium) (Time Horizon: Operations Planning; Same-day Operations; Real-time Operations)”
FirstEnergy Solutions	3	Affirmative	FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General  –“The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows “R7” instead of “R1” IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4 – There is no measure associated with this requirement - Measures do not include evidence of “planning” of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements
Hydro One Networks, Inc.	3	Affirmative	Hydro One Networks is casting an affirmative vote on the IRO-010 Standard. However, we believe that Requirement R3. should be modified at the earliest possible time when the standard is revised. Requirement R3. must be clear that when referring to data specifications it is within the parameters specified in Requirement R1. Consequently, R3 should read: R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship.
Lincoln Electric System	3	Negative	Comments: IRO-010-1 R1, R2, & R3 and IRO-008-1. The Standard Drafting Team has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now. LES believes TOP-003-0

**Initial Ballot Comments — Project for IROL Standard — IRO-010-1**

			should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. LES believes that the Interchange transaction data should be added to the new IRO-010-1 R1. LES believes that the data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. LES does agree with removing Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO & BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.
MidAmerican Energy Co.	3	Negative	Interchange transaction data should be added to the standard. Reliability Coordinator should still be required to share reliability data with TOs and BAs.
Alliant Energy Corp. Services, Inc.	4	Negative	Entities should be able to obtain study data upon request to the RC, rather than when expected to take action for an IROL.
AEP Service Corp.	5	Negative	AEP suggests that this standard tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROLs.
FirstEnergy Solutions	5	Affirmative	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General</p> <p>–The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4</p> <p>– There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</p>
Lincoln Electric System	5	Negative	IRO-010-1 R1, R2, & R3. The Standard Drafting Team has taken away the ability of entities to obtain study data from the RC unless entities are specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now.
AEP Marketing	6	Negative	AEP suggests that IRO-010-1 tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROLs.
Bonneville Power Administration	6	Negative	We do not believe that the IRO-010-1 C.M3 has text that is sufficient to be able to know what is adequate to confirm that we provided data, particularly data such as continually updated ICCP data used for situational awareness and using on-line reliability tools.
Entergy Services, Inc.	6	Affirmative	Agree with the content changes, however the format of the Requirements deleted in other standards has resulted in a reassignment of Requirement numbering and thus created an undesirable administrative/logistical situation of entities having to revise associations with Requirement numbers to Requirement verbiage. This also applies to NERC processes as well since, for example, a reference "R2" in an RSAW or a matrix may now be skewed and really be "R1 or R3" if a Requirement was deleted or added.
FirstEnergy	6	Affirmative	FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of



**Initial Ballot Comments — Project for IROL Standard — IRO-010-1**

Solutions			<p>reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments. Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006: General</p> <ul style="list-style-type: none"> <li>- The Violation Risk Factors should be added to the text of all of the standards. IRO-004 - VSL table shows "R7" instead of "R1" IRO-005 - Several Measures reference the incorrect requirement numbers TOP-003 - R4</li> <li>- There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</li> </ul>
Lincoln Electric System	6	Negative	<p>IRO-010-1 R1, R2, &amp; R3 and IRO-008-1. The Standard Drafting Team has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now. LES believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. LES believes that the Interchange transaction data should be added to the new IRO-010-1 R1. LES believes that the data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. LES does agree with removing Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO &amp; BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.</p>
Midwest Reliability Organization	10	Negative	<p>For the MRO comments: IRO-010-1 R1, R2, &amp; R3 and IRO-008-1, the SDT have taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now. The MRO believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. The MRO believes that the Interchange transaction data should be added to the new IRO-010-1 R1. The MRO believes that the data requirements will be more detailed in this new standard; however, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. The MRO does not agree with removing Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO &amp; BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.</p>

## Consideration of Comments on Initial Ballot of IRO-010 — Reliability Coordinator Data Specification and Collection

**Summary Consideration:** The drafting team corrected the typographical error in the red line version of IRO-004 – it showed “R7” instead of “R1”.  
 The SDT also updated the references in the measures for IRO-005 to ensure they reference the correct requirements, using the new requirement numbers.  
 The drafting team did not make any other modifications based on comments submitted with the initial ballot for this standard.

<b>Organization:</b>	Duke Energy Carolina
<b>Member:</b>	Douglas E. Hils
<b>Comment:</b>	<p>Duke Energy appreciates the opportunity to vote and comment on this proposed Standard. IRO-010-1 Requirement R3 requires that “Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship”. We are unsure what the phrase “with which it has a reliability relationship” means.</p> <p>IRO-008-1, IRO-009-1 and IRO-010-1 all introduce new terms that are not defined in the NERC Glossary. “Operations Planning”, “Same Day Operations” and “Real-time Operations” are used to identify time horizons for requirements.</p>
<b>Response:</b>	<p>The phrase “with which it has a reliability relationship” relates to parties directly involved (i.e. has a relationship) in a given RC’s plans “to prevent instability, uncontrolled separation, and cascading outages” (i.e. reliability) (see IRO-008 R3).</p> <p>The definitions used in the “Time Horizons” are not in the NERC Glossary but were posted with the standard when Time Horizons were added to the standard. Here is a link to that comment form: <a href="http://www.nerc.com/docs/standards/sar/IROL_Comment_Form_02Jan07.doc">http://www.nerc.com/docs/standards/sar/IROL_Comment_Form_02Jan07.doc</a></p> <p>Note that the definitions for the terms used in defining “Time Horizons” have been posted for stakeholder reference when each drafting team has added “Time Horizons” to requirements. Here are the definitions:</p> <ul style="list-style-type: none"> <li>- Long-term Planning: a planning horizon of one year or longer.</li> <li>- Operations Planning: operating and resource plans from day-ahead up to and including seasonal.</li> <li>- Same-day Operations: routine actions required within the timeframe of a day, but not real-time.</li> </ul>

**Consideration of Comments on Initial Ballot of IRO-010 — Reliability Coordinator Data Specification and Collection**

	<ul style="list-style-type: none"> <li>- Real-time Operations: actions required within one hour or less to preserve the reliability of the bulk electric system.</li> <li>- Operations Assessment: follow-up evaluations and reporting of real time operations.</li> </ul>
<b>Organization:</b>	American Electric Power
<b>Member:</b>	Paul B. Johnson
<b>Comment:</b>	AEP votes No. this proposed Standard calls for the Reliability Coordinator to specify the real-time data and information they require to support real-time monitoring, operational planning analyses, and real-time assessments without restriction. This allows for the Reliability Coordinator to ask for the addition of a significant amount of SCADA installations at the expense of the transmission owners in transmission areas that are not pertinent to the purpose of IRO-010-1 which is preventing the instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection. The Standard should tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROs.
<b>Response:</b>	<p>IRO-010-1 is limited to requests for data and information needed to support analyses “to prevent instability, uncontrolled separation, and cascading outages.” If the data request is not associated with an IROL, then that request is not covered by this standard.</p> <p>Transmission Operators are further protected from unreasonable requests by the fact that they have the option to question the validity of the Reliability Coordinator’s request to: its Regional Entity; NERC and FERC. The SDT agrees with AEP that the data requirements relate solely to monitoring and analyzing system to prevent and control IROs. “To prevent instability, uncontrolled separation, and cascading outages” is the definition of what an IROL is designed to effect.</p>
<b>Organization:</b>	Bonneville Power Administration
<b>Member:</b>	Donald S. Watkins, Rebecca Berdahl, Brenda S. Anderson
<b>Comment:</b>	We do not believe that the IRO-010-1 C.M3 has text that is sufficient to be able to know what is adequate to confirm that we provided data, particularly data such as continually updated ICCP data used for situational awareness and using on-line reliability tools.
<b>Response:</b>	IRO-010-1 does not address the data quality / bad data issue except to require an alternative process when an automated system is unavailable (and that alternative may be to do nothing). IRO-010-1 Requirement R1 and its sub-requirements do define the data quantity issue within the constructs of sample times and formats. The Reliability Coordinator’s list required in R1.1 is sufficient enough for responsible entities to know explicitly what data must be provided; and the responsible entity is expected to confirm that it has complied with the request, using whatever means it chooses. The measure intentionally allows the responsible entity to provide whatever evidence it has – this allows entities to demonstrate compliance without mandating that every entity provide exactly the same type

**Consideration of Comments on Initial Ballot of IRO-010 — Reliability Coordinator Data Specification and Collection**

	of evidence as that would force some entities to modify current practices without necessarily leading to an improvement in reliability.
<b>Organization:</b>	FirstEnergy Energy Delivery, FirstEnergy Solutions
<b>Member:</b>	Robert Martinko, Joanne Kathleen Borrell, Kenneth Dresner, Mark S Travaglianti
<b>Comment:</b>	<p>FirstEnergy Corp. appreciates the hard work of the Standard Drafting Team on the challenging task of reorganizing and enhancing the verbiage of the IROL requirements. We vote AFFIRMATIVE to standard IRO-010-1 and ask that the SDT consider our enclosed comments.</p> <p>Comments on EOP-001, IRO-002, IRO-004, IRO-005, TOP-003, TOP-005, and TOP-006:            General – The Violation Risk Factors should be added to the text of all of the standards.            IRO-004 - VSL table shows "R7" instead of "R1"            IRO-005 - Several Measures reference the incorrect requirement numbers            TOP-003 - R4 – There is no measure associated with this requirement - Measures do not include evidence of "planning" of scheduled outages per the requirements - VSL for R3 and R4 are incorrect and reference the wrong entity per the requirements</p>
<b>Response:</b>	<p>VRFs will be added to all approved standards as part of another administrative activity.</p> <p>The 'redline' version of IRO-004 did show R7 instead of R1 for the VSL and this has been corrected.</p> <p>The SDT has updated the references in the measures for IRO-005 to ensure they reference the correct requirements, using the new requirement numbers.</p> <p>The SDT is limited in what it can modify in TOP-003. The modifications are limited to revisions and retirements associated with the requirements in the new standards. Other modifications, such as adding missing measures or modifying compliance information, will be addressed by other drafting teams.</p>
<b>Organization:</b>	Great River Energy
<b>Member:</b>	Gordon Pietsch
<b>Comment:</b>	<p>IRO-010 does a good job of stating the requirements of the Reliability Coordinator. However, the standard gives the appearance of having taken away the TOP and BA ability to obtain study data from the RC unless they are specifically involved with the mitigation of an IROL. It is GRE's opinion that entities should be able to obtain data from the Reliability Coordinator upon request as they are able to now. GRE understands that the Reliability Coordinator's responsibility to share data was moved in part to IRO-008-1_R3. The new requirement however does not make is sufficiently transparent that the TOP and BA can request the Assessment results if they choose.</p>
<b>Response:</b>	<p>These IRO standards do not preclude any other entity from asking for and obtaining data.</p> <p>To the extent the Reliability Coordinator is held accountable for any and all IROLs then the Reliability</p>

**Consideration of Comments on Initial Ballot of IRO-010 — Reliability Coordinator Data Specification and Collection**

	Coordinator must get what data it needs. If the Transmission Operator and Balancing Authority need study data, then this should be addressed in a corollary standard. A Balancing Authority has no study functions regarding IROLs, the only involvement of a Balancing Authority with IROLs is to follow the directive of its Transmission Operators and Reliability Coordinator.
<b>Organization:</b>	Hydro One Networks, Inc.
<b>Member:</b>	Ajay Garg
<b>Comment:</b>	Hydro One Networks is casting an affirmative vote on the IRO-010 Standard. However, we believe that Requirement R3. should be modified at the earliest possible time when the standard is revised. Requirement R3. must be clear that when referring to data specifications it is within the parameters specified in Requirement R1. Consequently, R3 should read: R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship.
<b>Response:</b>	The SDT appreciates the added clarity suggested by the comment. The SDT is going to draft the Reliability Standard Audit Worksheets (RSAWs) for this set of standards and will include this language in the RSAW that is drafted for IRO-010-1.
<b>Organization:</b>	National Grid
<b>Member:</b>	Michael J Ranalli
<b>Comment:</b>	National Grid agrees with the comments suggested by NPCC with regard to Requirement R3. We suggest that the wording be revised at a later date to include a reference to Requirement R1. The suggested wording is as follows: "R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship. (Violation Risk Factor: Medium) (Time Horizon: Operations Planning; Same-day Operations; Real-time Operations)"
<b>Response:</b>	The SDT appreciates the added clarity suggested by the comment. The SDT is going to draft the Reliability Standard Audit Worksheets (RSAWs) for this set of standards and will include this language in the RSAW that is drafted for IRO-010-1.
<b>Organization:</b>	Northeast Utilities
<b>Member:</b>	David H. Boguslawski
<b>Comment:</b>	Insert in R3, "as specified in R1," after "... shall provide data and information, ...".
<b>Response:</b>	The SDT appreciates the added clarity suggested by the comment. The SDT is going to draft the Reliability Standard Audit Worksheets (RSAWs) for this set of standards and will include this language in the RSAW that is drafted for IRO-010-1.

## Consideration of Comments on Initial Ballot of IRO-010 — Reliability Coordinator Data Specification and Collection

<b>Organization:</b>	Consolidated Edison Co. of New York
<b>Member:</b>	Peter T Yost
<b>Comment:</b>	R3 may be revised at a later date to include a reference to R1 as follows: "R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship. (Violation Risk Factor: Medium) (Time Horizon: Operations Planning; Same-day Operations; Real-time Operations)"
<b>Response:</b>	The SDT appreciates the added clarity suggested by the comment. The SDT is going to draft the Reliability Standard Audit Worksheets (RSAWs) for this set of standards and will include this language in the RSAW that is drafted for IRO-010-1.
<b>Organization:</b>	Hydro One Networks, Inc.
<b>Member:</b>	Michael D. Penstone
<b>Comment:</b>	Hydro One Networks is casting an affirmative vote on the IRO-010 Standard. However, we believe that Requirement R3. should be modified at the earliest possible time when the standard is revised. Requirement R3. must be clear that when referring to data specifications it is within the parameters specified in Requirement R1. Consequently, R3 should read: R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified in R1, to the Reliability Coordinator(s) with which it has a reliability relationship.
<b>Response:</b>	The SDT appreciates the added clarity suggested by the comment. The SDT is going to draft the Reliability Standard Audit Worksheets (RSAWs) for this set of standards and will include this language in the RSAW that is drafted for IRO-010-1.
<b>Organization:</b>	MidAmerican Energy Co.
<b>Member:</b>	Thomas C. Mielnik
<b>Comment:</b>	Interchange transaction data should be added to the standard. Reliability Coordinator should still be required to share reliability data with TOs and BAs.
<b>Response:</b>	<p>IRO-010-1 Requirement R1 provides the Reliability Coordinator the flexibility to request whatever data it needs which is why there is not a list of ad hoc items and no inclusion of Interchange Transactions. Interchange Transactions will be included in the Reliability Coordinator's specifications if needed, and omitted if they are not needed.</p> <p>These IRO standards do not preclude any other entity from asking for and obtaining data. To the extent the Reliability Coordinator is held accountable for any and all IROs then the Reliability Coordinator must get what data it needs. If the Transmission Operator and Balancing Authority need</p>

## Consideration of Comments on Initial Ballot of IRO-010 — Reliability Coordinator Data Specification and Collection

	study data, then this should be addressed in a corollary standard. A Balancing Authority has no study functions regarding IROs, the only involvement of a Balancing Authority with IROs is to follow the directive of its Transmission Operators and Reliability Coordinator.
<b>Organization:</b>	Alliant Energy Corp. Services, Inc.
<b>Member:</b>	Kenneth Goldsmith
<b>Comment:</b>	Entities should be able to obtain study data upon request to the RC, rather than when expected to take action for an IROL.
<b>Response:</b>	These IRO standards do not preclude any other entity from asking for and obtaining data. To the extent the Reliability Coordinator is held accountable for any and all IROs then the Reliability Coordinator must get what data it needs. If the Transmission Operator and Balancing Authority need study data, then this should be addressed in a corollary standard. A Balancing Authority has no study functions regarding IROs, the only involvement of a Balancing Authority with IROs is to follow the directive of its Transmission Operators and Reliability Coordinator.
<b>Organization:</b>	AEP Service Corp.
<b>Member:</b>	Brock Ondayko
<b>Comment:</b>	AEP suggests that this standard tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROs.
<b>Response:</b>	IRO-010-1 is limited to requests for data and information needed to support analyses “to prevent instability, uncontrolled separation, and cascading outages.” If the data request is not associated with an IROL, then that request is not covered by this standard. The SDT agrees with AEP that the data requirements relate solely to monitoring and analyzing system to prevent and control IROs. “To prevent instability, uncontrolled separation, and cascading outages” is the definition of what an IROL is designed to effect.
<b>Organization:</b>	AEP Marketing
<b>Member:</b>	Edward P. Cox
<b>Comment:</b>	AEP suggests that IRO-010-1 tie the specification of data and information requirements solely to the needs for monitoring and analyzing the control of IROs.
<b>Response:</b>	IRO-010-1 is limited to requests for data and information needed to support analyses “to prevent instability, uncontrolled separation, and cascading outages.” If the data request is not associated with an IROL, then that request is not covered by this standard. The SDT agrees with AEP that the data requirements relate solely to monitoring and analyzing system to prevent and control IROs. “To prevent instability, uncontrolled separation, and cascading outages” is the definition of what an IROL is designed to effect.

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<b>Organization:</b>	Midwest Reliability Organization
<b>Member:</b>	Larry Brusseau
<b>Comment:</b>	<p>For the MRO comments: IRO-010-1 R1, R2, &amp; R3 and IRO-008-1, the SDT have taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now.</p> <p>The MRO believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. The MRO believes that the Interchange transaction data should be added to the new IRO-010-1 R1. The MRO believes that the data requirements will be more detailed in this new standard; however, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. The MRO does not agree with removing Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO &amp; BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.</p>
<b>Response:</b>	<p>These IRO standards do not preclude any other entity from asking for and obtaining data. To the extent the Reliability Coordinator is held accountable for any and all IROLs then the Reliability Coordinator must get what data it needs. If the Transmission Operator and Balancing Authority need study data, then this should be addressed in a corollary standard. A Balancing Authority has no study functions regarding IROLs, the only involvement of a Balancing Authority with IROLs is to follow the directive of its Transmission Operators and Reliability Coordinator.</p> <p>Both NERC and FERC have requested that the standards be cleaned up and that includes removing redundancies. Outage reporting need only be covered once – the SDT simplified the data provision requirements by ensuring that there would be a single requirement for a specification that identified all data and information that needed to be provided to the Reliability Coordinator.</p>
<b>Organization:</b>	Lincoln Electric System
<b>Member:</b>	Bruce Merrill, Eric Ruskamp
<b>Comment:</b>	<p>Comments: IRO-010-1 R1, R2, &amp; R3 and IRO-008-1. The Standard Drafting Team has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now.</p>



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	<p>LES believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer. LES believes that the Interchange transaction data should be added to the new IRO-010-1 R1. LES believes that the data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1. LES does agree with removing Reliability Coordinator from the requirement. - Including the Reliability Coordinator in the statement that the RC, TO &amp; BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity.</p>
<b>Response:</b>	<p>These IRO standards do not preclude any other entity from asking for and obtaining data. To the extent the Reliability Coordinator is held accountable for any and all IROLs then the Reliability Coordinator must get what data it needs. If the Transmission Operator and Balancing Authority need study data, then this should be addressed in a corollary standard. A Balancing Authority has no study functions regarding IROLs, the only involvement of a Balancing Authority with IROLs is to follow the directive of its Transmission Operators and Reliability Coordinator.</p>
<b>Organization:</b>	Entergy Services, Inc.
<b>Member:</b>	William Franklin
<b>Comment:</b>	<p>Agree with the content changes, however the format of the Requirements deleted in other standards has resulted in a reassignment of Requirement numbering and thus created an undesirable administrative/logistical situation of entities having to revise associations with Requirement numbers to Requirement verbiage. This also applies to NERC processes as well since, for example, a reference "R2" in an RSAW or a matrix may now be skewed and really be "R1 or R3" if a Requirement was deleted or added.</p>
<b>Response:</b>	<p>This is an administrative issue, outside the drafting team's scope. The team will forward your comment to the Director of Standards for his consideration.</p>
<b>Organization:</b>	Minnesota Power, Inc.
<b>Member:</b>	Carol Gerou
<b>Comment:</b>	<p>1. On page 10 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirements are IRO-004-1 R4 &amp; R5 and IRO-005-2 R2 while the proposed replacement requirements are IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3. Minnesota Power's comment to IRO-010-1 R1, R2, &amp; R3 and IRO-008-1 R3 is, "The SDT has taken away the ability of entities to obtain study data from the RC unless entities area specifically expected to take actions for an IROL. The current standard says that we may obtain this data upon request at any time. Entities should be allowed to obtain data from the RC upon request as they have now."</p>

**Response:** These IRO standards do not preclude any other entity from asking for and obtaining data. To the extent the Reliability Coordinator is held accountable for any and all IROs then the Reliability Coordinator must get what data it needs. If the Transmission Operator and Balancing Authority need study data, then this should be addressed in a corollary standard. A Balancing Authority has no study functions regarding IROs, the only involvement of a Balancing Authority with IROs is to follow the directive of its Transmission Operators and Reliability Coordinator.

2. On page 18 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-003-0 R1 while the proposed replacement requirements are IRO-010-1 R1, R2, & R3. Minnesota Power's comment is, "Minnesota Power believes TOP-003-0 should remain as it stands. Having the requirement to report outage data to the RC in two places is better than not having it in TOP-003-0. Having it listed as a data requirement only and not in the standard does not make it clearer."

**Response:** Both NERC and FERC have requested that the standards be cleaned up and that includes removing redundancies. Outage reporting need only be covered once – the SDT simplified the data provision requirements by ensuring that there would be a single requirement for a specification that identified all data and information that needed to be provided to the Reliability Coordinator.

3. On page 19 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-005-0 R1 while the proposed replacement requirement is IRO-010-1 R1. Minnesota Power's comment is, "Interchange transaction data should be added to the new IRO-010-1 R1."

**Response:** IRO-010-1 Requirement R1 provides the Reliability Coordinator the flexibility to request whatever data it needs which is why there is not a list of ad hoc items and no inclusion of Interchange Transactions. Interchange Transactions will be included if needed, and omitted if they are not needed.

4. On page 20 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-005-1 Attachment 1- TOP-005-0 Electric System Data Reliability Data while the proposed replacement requirement is IRO-010-1 R3. Minnesota Power's comment is, "Agree – Data requirements will be more detailed in new standard. However, RC should still be required to share this data with the TO's and BA's. This information should not be lost from this requirement by removing the RC from TOP-005-1 attachment 1."

**Response:** The requirements remaining in TOP-005 require Balancing Authorities and Transmission Operators to share data with other Balancing Authorities and Transmission Operators. IRO-008-1 Requirement R3 requires the Reliability Coordinator to share the data under specified conditions. The new standard does not preclude any other entity from asking for and obtaining data.

## Consideration of Comments on Initial Ballot of IRO-010 — Reliability Coordinator Data Specification and Collection

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5. On page 22 of 23 of the redlined "Implementation Plan for Operate Within Interconnection Reliability Operating Limits Standards", the already approved standard requirement is TOP-006-1 R4 while the proposed replacement requirement is IRO-010-1 R1 R2, & R3. Minnesota Power's comment to TOP-006-1 R4 is, "Minnesota Power don't agree with removing reliability coordinator from the requirement. – Including the Reliability Coordinator in the statement that the RC, TO & BA's shall have information including weather forecasts and past load patterns available to predict near-term load patterns provides clarity."

**Response:** The adopted paradigm is to provide flexibility and define the objective not the procedure. Listing data items can lead to including data that is not needed and omitting data that is needed. If a Reliability Coordinator needs data including such items as weather forecasts and load patterns, then the Reliability Coordinator will include that item in its list to the entity involved; and if the Reliability Coordinator doesn't need the item then the Reliability Coordinator will not ask for it. The concept is that the Reliability Coordinator is obligated to comply with IROLs and that the Reliability Coordinator will not be excused if it did not ask for data that it needed to ensure IROL compliance.

## Standards Announcement

### Eight Recirculation Ballot Windows Open August 12, 2008

**Now available at:** <https://standards.nerc.net/CurrentBallots.aspx>

#### Recirculation Ballot Windows for IRO-008-1, IRO-009-1 and IRO-010-1 Open August 12, 2008

The [recirculation ballots](#) for the following [Interconnection Reliability Operating Limit](#) (IROL) standards and their associated implementation plan open at 8 a.m. (EDT) on Tuesday, August 12, 2008:

- IRO-008-1— Reliability Coordinator Operational Analyses and Real-time Assessments
- IRO-009-1— Reliability Coordinator Actions to Operate within IROLs
- IRO-010-1— Reliability Coordinator Data Specification and Collection

These standards require the Reliability Coordinator (RC) to take actions to keep the bulk electric system operating within IROLs.

The ballot for each standard includes the retirement or revision of associated requirements from some already approved standards as identified in the table below. The IROL [implementation plan](#) contains the justification for the recommended retirements and revisions.

Note that during the initial ballot window, balloters identified some typographical errors in IRO-004 and IRO-005 and these have been corrected. A redline version of IRO-004 and IRO-005 has been posted to identify, with yellow highlighting, the corrections made. The corrections include the following:

- IRO-004 – changed the reference from “R7” to “R1” for the identification of the first set of VSLs
- IRO-005 – corrected the measures to reference the new requirement numbers

Three Ballots for IROL Standards	
Ballot for New Standard	Includes Modifications to Associated Approved Standards
IRO-008 — RC Operational Analyses and Real-time Assessments	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R1 and R2</li> </ul>
IRO-009 — RC Actions to Operate within IROLs	EOP-001-0 — Emergency Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R2</li> </ul>
	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>▪ Retire R3 and R6</li> </ul>
	IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>▪ Retire R3, R5, R16, R17;</li> <li>▪ Modify R9, R13 and R14</li> </ul>

IRO-010 — RC Data Specification and Collection	IRO-002-1 — RC – Facilities ▪ Retire R2
	IRO-004-1 — RC – Operations Planning ▪ Retire R4, R5
	IRO-005-2 — RC – Current Day Operations ▪ Retire R2
	TOP-003-0 — Planned Outage Coordination ▪ Modify R1.2
	TOP-005-1 — Operational Reliability Information ▪ Retire R1, R1.1
	TOP-006-1 — Monitoring System Conditions ▪ Modify R4

The recirculation ballot for each of the above standards will **close** at 8 p.m. (EDT) on Thursday, **August 21, 2008**.

**Five Recirculation Ballot Windows for Project 2006-07 — ATC/TTC and CBM/TRM Open August 12, 2008**

The [recirculation ballots](#) for the following [ATC-related standards](#) and their associated implementation plans open at 8 a.m. (EDT) on Tuesday, August 12, 2008:

- MOD-001-1 — Available Transfer Capability
- MOD-008-1 — Transmission Reliability Margin
- MOD-028-1 — Area Interchange Methodology
- MOD-029-1 — Rated System Path Methodology
- MOD-030-1 — Flowgate Methodology

This set of standards requires consistency in the calculation and documentation of Transmission Reliability Margin (TRM), Total Transfer Capability (TTC), Available Flowgate Capability (AFC), and Available Transfer Capability (ATC). (Note that the ATC-related standard for Capacity Benefit Margin is not included in this set of ballots).

The ballot for each standard includes the retirement of associated approved standards as identified in the table below. The [implementation plans](#) contain the justification for the recommended retirements.

Note that during the initial ballot window, balloters identified some typographical errors in MOD-030 and these have been corrected. The errors include the following:

- Applicability 4.1.1 - added a space between "(AFCs)" and "on"
- R1 - replaced the “period” with a “colon” following "(ATCID)"
- R2.1.2 - changed "analyses" to “analysis”
- Added "R"s to all "fourth-tier" requirements (e.g., changed “2.1.1.1” to “R2.1.1.1”)

A redline version of MOD-030 has been posted to identify, with yellow highlighting, the corrections made. In addition, all of the ATC-related standards were missing the “Regional Variances” and “Version History” sections of the standard and these have been added to all five of the standards.

During the initial ballot window, several balloters provided suggestions for additional improvements to MOD-030-1. (The suggested improvements are aimed at allowing additional methods of achieving the same reliability objective – the suggested improvements are not aimed at correcting any errors in MOD-030-1.) Under the existing standards development process, if the drafting team makes these changes to MOD-030-1, then the standard must be posted for an additional comment period, and then the balloting must begin again. This delay would mean that the standard would not be ready to file with FERC before its due date.

To remedy this problem, the drafting team has submitted a SAR to initiate modifications to MOD-030-1, and has received Standards Committee authorization to post the SAR and a proposed version of MOD-030-2 that reflects consideration of comments submitted with the initial ballot of MOD-030-1. The SAR and proposed MOD-030-2 are currently posted for stakeholder review and comment. As envisioned, MOD-030-2 will move through the standards development process and will be filed with governmental authorities before MOD-030-1 becomes effective.

Five Ballots for ATC-related Standards	
Ballot for New Standard	Includes Retirement of Associated Approved Standards
MOD-001-1 — Available Transfer Capability	MOD-001-0 — Documentation of TTC and ATC Calculation Methodologies FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs
MOD-008-1 — Transmission Reliability Margin	MOD-008-0 — Documentation and Content of Each Regional TRM Methodology MOD-009-0 — Procedure for Verifying TRM Values
MOD-028-1 — Area Interchange Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs
MOD-029-1 — Rated System Path Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs
MOD-030-1 — Flowgate Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs

The recirculation ballot for each of the above standards will **close** at 8 p.m. (EDT) on Thursday, **August 21, 2008**.

*For more information or assistance, please contact Maureen Long,  
Standards Process Manager, at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or at (813) 468-5998.*

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## Standards Announcement

### Final Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

#### Final Ballot Results for Three IROL-related Standards and Associated Implementation Plans

The final ballots for the following Interconnection Reliability Operating Limit ([IROL](#)) related standards (and the associated retirements and revisions identified in their implementation plans) were conducted from August 12, 2008 through August 21, 2008. The ballots were approved, and the results are shown in the table below:

Three Ballots for IROL-related Standards		
Ballot for New Standard	Includes Modifications to Associated Approved Standards	Final Ballot Results
IRO-008 — RC Operational Analyses and Real-time Assessments	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>Retire R1 and R2</li> </ul>	Quorum: 93.72 % Approval: 89.49 %
IRO-009 — RC Actions to Operate within IROLs	EOP-001-0 — Emergency Operations Planning <ul style="list-style-type: none"> <li>Retire R2</li> </ul>	Quorum: 93.68 % Approval: 86.53 %
	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>Retire R3 and R6</li> </ul>	
	IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>Retire R3, R5, R16, R17;</li> <li>Modify R9, R13 and R14</li> </ul>	
IRO-010 — RC Data Specification and Collection	IRO-002-1 — RC – Facilities <ul style="list-style-type: none"> <li>Retire R2</li> </ul>	Quorum: 93.75 % Approval: 85.95 %
	IRO-004-1 — RC – Operations Planning <ul style="list-style-type: none"> <li>Retire R4, R5</li> </ul>	
	IRO-005-2 — RC – Current Day Operations <ul style="list-style-type: none"> <li>Retire R2</li> </ul>	
	TOP-003-0 — Planned Outage Coordination <ul style="list-style-type: none"> <li>Modify R1.2</li> </ul>	
	TOP-005-1 — Operational Reliability Information <ul style="list-style-type: none"> <li>Retire R1, R1.1</li> </ul>	
	TOP-006-1 — Monitoring System Conditions <ul style="list-style-type: none"> <li>Modify R4</li> </ul>	

Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and
- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.



The [Ballot Results](#) standards web page provides a link to the detailed results of each of these ballots.

## Final Ballot Results for Five ATC-related Standards and Associated Implementation Plans (Project 2006-07)

The final ballots for five [ATC-related standards](#) (and the associated retirements identified in their implementation plans) were conducted from August 12, 2008 through August 21, 2008. The ballots were approved, and the results are shown in the table below:

Five Ballots for ATC-related Standards		
Ballot for New Standard	Includes Retirement of Associated Approved Standards	Final Ballot Results
MOD-001-1 Available Transfer Capability	MOD-001-0 — Documentation of TTC and ATC Calculation Methodologies FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 94.87% Approval: 76.83%
MOD-008-1 Transmission Reliability Margin	MOD-008-0 — Documentation and Content of Each Regional TRM Methodology MOD-009-0 — Procedure for Verifying TRM Values	Quorum: 95.15% Approval: 81.49%
MOD-028-1 Area Interchange Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 95.54 % Approval: 79.34 %
MOD-029-1 Rated System Path Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 95.56 % Approval: 92.24 %
MOD-030-1 Flowgate Methodology	FAC-012-1 — TC Methodology FAC-013-1 — Establish and Communicate TCs	Quorum: 95.24 % Approval: 74.26 %

Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and
- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.

The [Ballot Results](#) standards web page provides a link to the detailed results of each of these ballots.

## Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance, please contact Shaun Streeter,  
Standards Program Administrator, at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at (609) 452-8060.*

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Ballot Results	
<b>Ballot Name:</b>	IROL Standard - IRO-008_rc
<b>Ballot Period:</b>	8/12/2008 - 8/21/2008
<b>Ballot Type:</b>	recirculation
<b>Total # Votes:</b>	179
<b>Total Ballot Pool:</b>	191
<b>Quorum:</b>	<b>93.72 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	89.49 %
<b>Ballot Results:</b>	<b>The Standard has Passed</b>

Summary of Ballot Results								
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote
			# Votes	Fraction	# Votes	Fraction	# Votes	
1 - Segment 1.	56	1	41	0.82	9	0.18	2	4
2 - Segment 2.	9	0.9	9	0.9	0	0	0	0
3 - Segment 3.	46	1	33	0.868	5	0.132	6	2
4 - Segment 4.	8	0.8	7	0.7	1	0.1	0	0
5 - Segment 5.	33	1	28	0.903	3	0.097	0	2
6 - Segment 6.	21	1	16	0.842	3	0.158	0	2
7 - Segment 7.	1	0	0	0	0	0	0	1
8 - Segment 8.	3	0.3	3	0.3	0	0	0	0
9 - Segment 9.	7	0.6	6	0.6	0	0	0	1
10 - Segment 10.	7	0.7	6	0.6	1	0.1	0	0
<b>Totals</b>	<b>191</b>	<b>7.3</b>	<b>149</b>	<b>6.533</b>	<b>22</b>	<b>0.767</b>	<b>8</b>	<b>12</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Ameren Services Company	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Basin Electric Power Cooperative	David Rudolph	Negative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Central Maine Power Company	Brian Conroy		
1	Consolidated Edison Co. of New York	Edwin Thompson	Affirmative	
1	Duke Energy Carolina	Douglas E. Hills	Negative	<a href="#">View</a>
1	E.ON U.S. LLC	Larry Monday	Negative	
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Negative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	<a href="#">View</a>
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Hydro-Quebec TransEnergie	Julien Gagnon	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	

1	Lincoln Electric System	Doug Bantam	Negative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Negative	<a href="#">View</a>
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Orlando Utilities Commission	Brad Chase	Negative	
1	Otter Tail Power Company	Lawrence R. Larson	Negative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Platte River Power Authority	John C Collins	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Abstain	
1	Sacramento Municipal Utility District	Dilip Mahendra	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Christopher M. Turner	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Tampa Electric Co.	Thomas J. Szelistowski	Affirmative	
1	Tennessee Valley Authority	Larry Akens	Affirmative	
1	Tucson Electric Power Co.	Ronald P. Belval		
1	Western Area Power Administration	Robert Temple	Affirmative	
1	Western Farmers Electric Coop.	Alan Derichsweiler		
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Affirmative	
2	British Columbia Transmission Corporation	Phil Park	Affirmative	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Affirmative	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services Company	Mark Peters	Abstain	
3	American Electric Power	Raj Rana	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Avista Corp.	Robert Lafferty	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Negative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Abstain	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Negative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Negative	

3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	North Carolina Municipal Power Agency #1	Denise Roeder	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Affirmative	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Abstain	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Abstain	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Tampa Electric Co.	Ronald L. Donahey		
3	Tennessee Valley Authority	Cynthia Herron		
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Negative	
4	Consumers Energy	David Frank Ronk	Affirmative	
4	Florida Municipal Power Agency	Ralph Anderson	Affirmative	
4	Northern California Power Agency	Fred E. Young	Affirmative	
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	BC Hydro and Power Authority	Clement Ma	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	
5	Connectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative	
5	Florida Power & Light Co.	Robert A. Birch	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florum	Negative	<a href="#">View</a>
5	Louisville Gas and Electric Co.	Charlie Martin	Negative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Orlando Utilities Commission	Richard Kinas	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern California Edison Co.	David Schiada	Affirmative	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tampa Electric Co.	Frank L Busot		
5	Tenaska, Inc.	Scott M. Helyer	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Affirmative	
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Entergy Services, Inc.	William Franklin	Affirmative	<a href="#">View</a>

6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Negative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb		
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent	Affirmative	
8	Volkman Consulting	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney		
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Phillip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Negative	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Carter B Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

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Ballot Results	
<b>Ballot Name:</b>	IROL Standard - IRO-009_rc
<b>Ballot Period:</b>	8/12/2008 - 8/21/2008
<b>Ballot Type:</b>	recirculation
<b>Total # Votes:</b>	178
<b>Total Ballot Pool:</b>	190
<b>Quorum:</b>	<b>93.68 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	86.53 %
<b>Ballot Results:</b>	<b>The Standard has Passed</b>

Summary of Ballot Results								
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote
			# Votes	Fraction	# Votes	Fraction	# Votes	
1 - Segment 1.	56	1	40	0.8	10	0.2	2	4
2 - Segment 2.	9	0.9	9	0.9	0	0	0	0
3 - Segment 3.	46	1	32	0.842	6	0.158	6	2
4 - Segment 4.	8	0.8	6	0.6	2	0.2	0	0
5 - Segment 5.	32	1	25	0.833	5	0.167	0	2
6 - Segment 6.	21	1	16	0.842	3	0.158	0	2
7 - Segment 7.	1	0	0	0	0	0	0	1
8 - Segment 8.	3	0.3	3	0.3	0	0	0	0
9 - Segment 9.	7	0.6	6	0.6	0	0	0	1
10 - Segment 10.	7	0.7	6	0.6	1	0.1	0	0
<b>Totals</b>	<b>190</b>	<b>7.3</b>	<b>143</b>	<b>6.317</b>	<b>27</b>	<b>0.983</b>	<b>8</b>	<b>12</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Ameren Services Company	Kirit S. Shah	Affirmative	<a href="#">View</a>
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Basin Electric Power Cooperative	David Rudolph	Negative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Central Maine Power Company	Brian Conroy		
1	Consolidated Edison Co. of New York	Edwin Thompson	Affirmative	
1	Duke Energy Carolina	Douglas E. Hills	Negative	<a href="#">View</a>
1	E.ON U.S. LLC	Larry Monday	Negative	
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Negative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	<a href="#">View</a>
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Hydro-Quebec TransEnergie	Julien Gagnon	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	

1	Lincoln Electric System	Doug Bantam	Negative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Negative	<a href="#">View</a>
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Orlando Utilities Commission	Brad Chase	Negative	
1	Otter Tail Power Company	Lawrence R. Larson	Negative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Platte River Power Authority	John C Collins	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Abstain	
1	Sacramento Municipal Utility District	Dilip Mahendra	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Christopher M. Turner	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Tampa Electric Co.	Thomas J. Szelistowski	Affirmative	
1	Tennessee Valley Authority	Larry Akens	Affirmative	
1	Tucson Electric Power Co.	Ronald P. Belval		
1	Western Area Power Administration	Robert Temple	Negative	<a href="#">View</a>
1	Western Farmers Electric Coop.	Alan Derichsweiler		
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Affirmative	
2	British Columbia Transmission Corporation	Phil Park	Affirmative	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Affirmative	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services Company	Mark Peters	Abstain	
3	American Electric Power	Raj Rana	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Avista Corp.	Robert Lafferty	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy	David A. Lapinski	Negative	<a href="#">View</a>
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Negative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Abstain	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Negative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Negative	

3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	North Carolina Municipal Power Agency #1	Denise Roeder	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Affirmative	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Abstain	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Abstain	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Tampa Electric Co.	Ronald L. Donahey		
3	Tennessee Valley Authority	Cynthia Herron		
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Negative	<a href="#">View</a>
4	Consumers Energy	David Frank Ronk	Negative	<a href="#">View</a>
4	Florida Municipal Power Agency	Ralph Anderson	Affirmative	
4	Northern California Power Agency	Fred E. Young	Affirmative	
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Tallahassee	Alan Gale	Negative	<a href="#">View</a>
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	
5	Connectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative	
5	Florida Power & Light Co.	Robert A. Birch	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florom	Negative	<a href="#">View</a>
5	Louisville Gas and Electric Co.	Charlie Martin	Negative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Orlando Utilities Commission	Richard Kinass	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern California Edison Co.	David Schiada	Affirmative	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tampa Electric Co.	Frank L Busot		
5	Tenaska, Inc.	Scott M. Helyer	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Negative	<a href="#">View</a>
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	
6	Entergy Services, Inc.	William Franklin	Affirmative	<a href="#">View</a>
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>



6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Negative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb		
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent	Affirmative	
8	Volkman Consulting	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney		
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Philip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Negative	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Carter B Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

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Ballot Results	
<b>Ballot Name:</b>	IROL Standard - IRO-010_rc
<b>Ballot Period:</b>	8/12/2008 - 8/21/2008
<b>Ballot Type:</b>	recirculation
<b>Total # Votes:</b>	180
<b>Total Ballot Pool:</b>	192
<b>Quorum:</b>	93.75 % The Quorum has been reached
<b>Weighted Segment Vote:</b>	85.95 %
<b>Ballot Results:</b>	The Standard has Passed

Summary of Ballot Results								
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote
			# Votes	Fraction	# Votes	Fraction	# Votes	
1 - Segment 1.	58	1	40	0.769	12	0.231	2	4
2 - Segment 2.	9	0.9	8	0.8	1	0.1	0	0
3 - Segment 3.	46	1	33	0.868	5	0.132	6	2
4 - Segment 4.	8	0.8	7	0.7	1	0.1	0	0
5 - Segment 5.	32	1	24	0.8	6	0.2	0	2
6 - Segment 6.	21	1	14	0.737	5	0.263	0	2
7 - Segment 7.	1	0	0	0	0	0	0	1
8 - Segment 8.	3	0.3	3	0.3	0	0	0	0
9 - Segment 9.	7	0.6	6	0.6	0	0	0	1
10 - Segment 10.	7	0.7	7	0.7	0	0	0	0
<b>Totals</b>	<b>192</b>	<b>7.3</b>	<b>142</b>	<b>6.274</b>	<b>30</b>	<b>1.026</b>	<b>8</b>	<b>12</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	Ameren Services Company	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Negative	<a href="#">View</a>
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Arizona Public Service Co.	Cary B. Deise	Affirmative	
1	Avista Corp.	Scott Kinney	Affirmative	
1	Basin Electric Power Cooperative	David Rudolph	Negative	
1	Bonneville Power Administration	Donald S. Watkins	Negative	<a href="#">View</a>
1	Central Maine Power Company	Brian Conroy		
1	Consolidated Edison Co. of New York	Edwin Thompson	Affirmative	
1	Dairyland Power Coop.	Robert W. Roddy	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils	Negative	<a href="#">View</a>
1	E.ON U.S. LLC	Larry Monday	Negative	
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Negative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Great River Energy	Gordon Pietsch	Negative	<a href="#">View</a>
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	<a href="#">View</a>
1	Hydro-Quebec TransEnergie	Julien Gagnon	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	

1	Kansas City Power & Light Co.	Jim Useldinger	Affirmative	
1	Lincoln Electric System	Doug Bantam	Negative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Negative	<a href="#">View</a>
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid	Michael J Ranalli	Affirmative	<a href="#">View</a>
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	<a href="#">View</a>
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oklahoma Gas and Electric Co.	Marvin E VanBebber	Abstain	
1	Oncor Electric Delivery	Charles W. Jenkins	Affirmative	
1	Orange and Rockland Utilities, Inc.	Edward Bedder	Affirmative	
1	Orlando Utilities Commission	Brad Chase	Negative	
1	Otter Tail Power Company	Lawrence R. Larson	Negative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Affirmative	
1	Platte River Power Authority	John C Collins	Affirmative	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Abstain	
1	Sacramento Municipal Utility District	Dilip Mahendra	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Christopher M. Turner	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Tampa Electric Co.	Thomas J. Szelistowski	Affirmative	
1	Tennessee Valley Authority	Larry Akens	Affirmative	
1	Tucson Electric Power Co.	Ronald P. Belval		
1	Western Area Power Administration	Robert Temple	Negative	<a href="#">View</a>
1	Western Farmers Electric Coop.	Alan Derichsweiler		
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Negative	<a href="#">View</a>
2	British Columbia Transmission Corporation	Phil Park	Affirmative	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Affirmative	
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Affirmative	
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services Company	Mark Peters	Abstain	
3	American Electric Power	Raj Rana	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Avista Corp.	Robert Lafferty	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Negative	<a href="#">View</a>
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	<a href="#">View</a>
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy Carolina	Henry Ernst-Jr	Negative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	Farmington Electric Utility System	Alan Glazner	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster	Abstain	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Great River Energy	Sam Kokkinen	Affirmative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	<a href="#">View</a>

3	Lincoln Electric System	Bruce Merrill	Negative	<a href="#">View</a>
3	Louisville Gas and Electric Co.	Charles A. Freibert	Negative	
3	Manitoba Hydro	Ronald Dacombe	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Negative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	North Carolina Municipal Power Agency #1	Denise Roeder	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Affirmative	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Abstain	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Abstain	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Tampa Electric Co.	Ronald L. Donahay		
3	Tennessee Valley Authority	Cynthia Herron		
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Wisconsin Public Service Corp.	James Maenner	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Negative	<a href="#">View</a>
4	Consumers Energy	David Frank Ronk	Affirmative	
4	Florida Municipal Power Agency	Ralph Anderson	Affirmative	
4	Northern California Power Agency	Fred E. Young	Affirmative	
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Negative	<a href="#">View</a>
5	Avista Corp.	Edward F. Groce	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Negative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	
5	Connectiv Energy Supply, Inc.	Richard K. Douglass	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	Florida Municipal Power Agency	Douglas Keegan	Affirmative	
5	Florida Power & Light Co.	Robert A. Birch	Affirmative	
5	Great River Energy	Cynthia E Sulzer	Negative	
5	JEA	Donald Gilbert	Affirmative	
5	Lincoln Electric System	Dennis Florom	Negative	<a href="#">View</a>
5	Louisville Gas and Electric Co.	Charlie Martin	Negative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Orlando Utilities Commission	Richard Kinass	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	Salt River Project	Glen Reeves	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Southern California Edison Co.	David Schiada	Affirmative	
5	Southern Company Services, Inc.	Roger D. Green	Affirmative	
5	Tampa Electric Co.	Frank L Busot		
5	Tenaska, Inc.	Scott M. Helyer	Affirmative	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Negative	<a href="#">View</a>
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Marketing	Edward P. Cox	Negative	<a href="#">View</a>
6	Bonneville Power Administration	Brenda S. Anderson	Negative	<a href="#">View</a>
6	Consolidated Edison Co. of New York	Nickesha P Carrol	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Affirmative	

6	Entergy Services, Inc.	William Franklin	Affirmative	<a href="#">View</a>
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>
6	Florida Municipal Power Agency	Robert C. Williams		
6	Great River Energy	Donna Stephenson	Negative	
6	Lincoln Electric System	Eric Ruskamp	Negative	<a href="#">View</a>
6	Louisville Gas and Electric Co.	Daryn Barker	Negative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	New York Power Authority	Thomas Papadopoulos	Affirmative	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen	Affirmative	
6	Salt River Project	Mike Hummel	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern California Edison Co.	Marcus V Lotto	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb		
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent	Affirmative	
8	Volkman Consulting	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Affirmative	
9	Maryland Public Service Commission	James Schafer	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney		
9	Oregon Public Utility Commission	Jerome Murray	Affirmative	
9	Public Service Commission of South Carolina	Philip Riley	Affirmative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Affirmative	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Affirmative	<a href="#">View</a>
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Affirmative	
10	SERC Reliability Corporation	Carter B Edge	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Affirmative	
10	Western Electricity Coordinating Council	Louise McCarren	Affirmative	

Legal and Privacy : 609.452.8060 voice : 609.452.9550 fax : 116-390 Village Boulevard : Princeton, NJ 08540-5721  
 Washington Office: 1120 G Street, N.W. : Suite 990 : Washington, DC 20005-3801

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## **Exhibit E**

Record of Development of Proposed IRO-010-1 Interpretation

## Project 2009-11

### Interpretation – IRO-010-1, R1.2 and R3 – Reliability Coordinator Data Specification and Collection by WECC Reliability Coordination Subcommittee

#### Related Files

**Status:** A request for an interpretation of IRO-010-1, Requirement R1.2 and R3 has been submitted by the WECC Reliability Coordination Subcommittee. The ballot pool approved the standards revisions. The revised standards will be submitted to the NERC Board of Trustees for adoption.

**Summary:**

The request asks to clarify the following:

- Does the phrase, “as specified” in Requirement R3 reference the documented data and information specification in IRO-010-1 Requirement R1, or is the data and information in Requirement R3 “any” data and information that the Reliability Coordinator might request?
- Is the intent of Requirement R3 to have each responsible entity provide its own data and information to its Reliability Coordinator, or is the intent to have responsible entities provide aggregated data (collected and compiled from other entities at the direction of the Reliability Coordinator) to the Reliability Coordinator?
- Under Requirement R1.2, what actions (on the part of the Reliability Coordinator) are expected to support the “mutually acceptable format” for submission of data and information?

**Interpretation Process:**

In accordance with the Reliability Standards Development Procedure, the interpretation must be posted for a 30-day pre-ballot review, and then balloted. There is no public comment period for an interpretation. Balloting will be conducted following the same method used for balloting standards. If the interpretation is approved by its ballot pool, then the interpretation will be appended to the standard and will become effective when adopted by the NERC Board of Trustees and approved by the applicable regulatory authorities. The interpretation will remain appended to the standard until the standard is revised through the normal standards development process. When the standard is revised, the clarifications provided by the interpretation will be incorporated into the revised standard.

Draft	Action	Dates	Results	Consideration of Comments
WECC Reliability Coordination Subcommittee Request for Interpretation of IRO-010-1, Requirement R1.2 and R3  <a href="#">Interpretation (1)</a>  <a href="#">Request for Interpretation (2)</a>	Recirculation Ballot  <a href="#">Info&gt;&gt; (8)</a>   <a href="#">Vote&gt;&gt;</a>	05/26/09 - 06/05/09 (closed)	<a href="#">Summary&gt;&gt; (9)</a> <a href="#">Full Record&gt;&gt; (10)</a>	
	Initial Ballot  <a href="#">Info&gt;&gt; (4)</a>   <a href="#">Vote&gt;&gt;</a>	04/22/09 - 05/01/09 (closed)	<a href="#">Summary&gt;&gt; (5)</a> <a href="#">Full Record&gt;&gt; (6)</a>	<a href="#">Consideration of Comments&gt;&gt; (7)</a>
	Pre-ballot Review  <a href="#">Info&gt;&gt; (3)</a>   <a href="#">Join&gt;&gt;</a>	03/24/09 - 04/22/09 (closed)		

Note: an Interpretation cannot be used to change a standard.

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b>	February 10, 2009
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b>	Nancy Bellows
<b>Organization:</b>	WECC Reliability Coordination Subcommittee
<b>Telephone:</b>	970-461-7246
<b>E-mail:</b>	bellows@wapa.gov
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number:</b>	IRO-010-1
<b>Standard Title:</b>	Reliability Coordinator Data Specification and Collection
<b>Identify specifically what needs clarification (If a category is not applicable, please leave it blank):</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>IRO-010-1</b>	
<p><b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability</p>	



Coordinator(s) with which it has a reliability relationship.

**Clarification needed:**

1. Does the phrase, "as specified" in Requirement R3 reference the documented data and information specification in IRO-010-1 Requirement R1, or is the data and information in Requirement R3 "any" data and information that the Reliability Coordinator might request?
2. Is the intent of Requirement R3 to have each responsible entity provide its own data and information to its Reliability Coordinator, or is the intent to have responsible entities provide aggregated data (collected and compiled from other entities at the direction of the Reliability Coordinator) to the Reliability Coordinator?
3. Under Requirement R1.2, what actions (on the part of the Reliability Coordinator) are expected to support the "mutually acceptable format" for submission of data and information?

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

If responsible entities are required to supply the Reliability Coordinator with any data requested by the Reliability Coordinator at any time, including data and information collected and aggregated for the Reliability Coordinator, then the responsible entities will need additional resources to meet the requirements in this standard.

Similarly, if the phrase, "mutually acceptable" does not require that the Reliability Coordinator "negotiate" an acceptable format for receipt of data and information, then the entities providing the data and information may need additional resources to convert their data into a format specified by the Reliability Coordinator. The RC may need additional resources if the phrase "mutually acceptable format" requires negotiation.

**Project 2009-11: Response to Request for an Interpretation of IRO-010-1 for Requirements R1.2 and R3**

The following interpretation of IRO-010-1 — Reliability Coordinator Data Specification and Collection, Requirements R1 and R3, was developed by the IROL Standards Drafting Team.

**Requirement Number and Text of Requirement**

**R1.** The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:

**R1.1.** List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.

**R1.2.** Mutually agreeable format.

**R1.3.** Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).

**R1.4.** Process for data provision when automated Real-Time system operating data is unavailable.

**R3.** Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship.

### Question #1

Does the phrase, "as specified" in Requirement R3 reference the documented data and information specification in IRO-010-1 Requirement R1, or is the data and information in Requirement R3 "any" data and information that the Reliability Coordinator might request?

### Response to Question #1

The data to be supplied in Requirement R3 applies to the documented specification for data and information referenced in Requirement R1.

### Question #2

Is the intent of Requirement R3 to have each responsible entity provide its own data and information to its Reliability Coordinator, or is the intent to have responsible entities provide aggregated data (collected and compiled from other entities at the direction of the Reliability Coordinator) to the Reliability Coordinator?

### Response to Question #2

The intent of Requirement R3 is for each responsible entity to ensure that its data and information (as stated in the documented specification in Requirement R1) are provided to the Reliability Coordinator.

Another entity may provide that data or information to the Reliability Coordinator on behalf of the responsible entity, but the responsibility remains with the responsible entity. There is neither intent nor obligation for any entity to compile information from other entities and provide it to the Reliability Coordinator.

### Question #3

Under Requirement R1.2, what actions (on the part of the Reliability Coordinator) are expected to support the "mutually acceptable format" for submission of data and information?

### Response to Question #3

Requirement R1.2 mandates that the parties will reach a mutual agreement with respect to the format of the data and information. If the parties can not mutually agree on the format, it is expected that they will negotiate to reach agreement or enter into dispute resolution to resolve the disagreement.

Note: an Interpretation cannot be used to change a standard.

Request for an Interpretation of a Reliability Standard	
<b>Date submitted:</b>	February 10, 2009
<b>Contact information for person requesting the interpretation:</b>	
<b>Name:</b>	Nancy Bellows
<b>Organization:</b>	WECC Reliability Coordination Subcommittee
<b>Telephone:</b>	970-461-7246
<b>E-mail:</b>	bellows@wapa.gov
<b>Identify the standard that needs clarification:</b>	
<b>Standard Number:</b>	IRO-010-1
<b>Standard Title:</b>	Reliability Coordination - Operations Planning, Reliability Coordinator Data Specification and Collection, Planned Outage Coordination
<b>Identify specifically what needs clarification (If a category is not applicable, please leave it blank):</b>	
<b>Requirement Number and Text of Requirement:</b>	
<b>IRO-010-1</b>	
<p><b>R1.</b> The Reliability Coordinator shall have a documented specification for data and information to build and maintain models to support Real-time monitoring, Operational Planning Analyses, and Real-time Assessments of its Reliability Coordinator Area to prevent instability, uncontrolled separation, and cascading outages. The specification shall include the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.</b> List of required data and information needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments.</li> <li><b>R1.2.</b> Mutually agreeable format.</li> <li><b>R1.3.</b> Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</li> <li><b>R1.4.</b> Process for data provision when automated Real-Time system operating data is unavailable.</li> </ul> <p><b>R3.</b> Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability</p>	

Coordinator(s) with which it has a reliability relationship.

**Clarification needed:**

1. Does the phrase, "as specified" in Requirement R3 reference the documented data and information specification in IRO-010-1 Requirement R1, or is the data and information in Requirement R3 "any" data and information that the Reliability Coordinator might request?
2. Is the intent of Requirement R3 to have each responsible entity provide its own data and information to its Reliability Coordinator, or is the intent to have responsible entities provide aggregated data (collected and compiled from other entities at the direction of the Reliability Coordinator) to the Reliability Coordinator?
3. Under Requirement R1.2, what actions (on the part of the Reliability Coordinator) are expected to support the "mutually acceptable format" for submission of data and information?

**Identify the material impact associated with this interpretation:**

**Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.**

If responsible entities are required to supply the Reliability Coordinator with any data requested by the Reliability Coordinator at any time, including data and information collected and aggregated for the Reliability Coordinator, then the responsible entities will need additional resources to meet the requirements in this standard.

Similarly, if the phrase, "mutually acceptable" does not require that the Reliability Coordinator "negotiate" an acceptable format for receipt of data and information, then the entities providing the data and information may need additional resources to convert their data into a format specified by the Reliability Coordinator. The RC may need additional resources if the phrase "mutually acceptable format" requires negotiation.

## Standards Announcement

### Ballot Pool and Pre-ballot Window

March 24–April 22, 2009

Now available at: <https://standards.nerc.net/BallotPool.aspx>

### **Interpretation of IRO-010-1 for the WECC Reliability Coordination Subcommittee (Project 2009-11)**

An interpretation of IRO-010-1 — Reliability Coordinator Data Specification and Collection, Requirements R1.2 and R3, for the Western Electricity Coordinating Council (WECC) Reliability Coordination Subcommittee is posted for a 30-day pre-ballot review. Registered Ballot Body members may join the ballot pool to be eligible to vote on this interpretation **until 8 a.m. EDT on April 22, 2009**.

During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The list server for this ballot pool is: [bp-2009-11 RFI WECC RCS in](#).

### **Project Background**

The WECC Reliability Coordination Subcommittee is seeking clarification on 1) the type of data to be supplied to the Reliability Coordinator, 2) which entities are ultimately responsible for ensuring data are provided, and 3) what actions are expected of the Reliability Coordinator regarding a “mutually acceptable format.” The request and interpretation can be found on the project page:

[http://www.nerc.com/filez/standards/Project2009-11\\_Interpretation\\_IRO-010-1\\_WECC\\_RCS.html](http://www.nerc.com/filez/standards/Project2009-11_Interpretation_IRO-010-1_WECC_RCS.html)

### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,  
please contact Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Standards Announcement

Initial Ballot Window Open

April 22–May 1, 2009

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

### **Interpretation of IRO-010-1 for the WECC Reliability Coordination Subcommittee (Project 2009-11)**

An initial ballot window for an interpretation of IRO-010-1 — Reliability Coordinator Data Specification and Collection, Requirements R1.2 and R3, for the Western Electricity Coordinating Council (WECC) Reliability Coordination Subcommittee is now open **until 8 p.m. EDT on May 1, 2009**.

### **Project Background**

The WECC Reliability Coordination Subcommittee is seeking clarification on 1) the type of data to be supplied to the Reliability Coordinator, 2) which entities are ultimately responsible for ensuring data are provided, and 3) what actions are expected of the Reliability Coordinator regarding a “mutually acceptable format.” The request and interpretation can be found on the project page:

[http://www.nerc.com/filez/standards/Project2009-11\\_Interpretation\\_IRO-010-1\\_WECC\\_RCS.html](http://www.nerc.com/filez/standards/Project2009-11_Interpretation_IRO-010-1_WECC_RCS.html)

### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,  
please contact Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*

## Standards Announcement

### Initial Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

#### **Interpretation of IRO-010-1 for the WECC Reliability Coordination Subcommittee (Project 2009-11)**

Since at least one negative ballot was submitted with a comment, a recirculation ballot will be held. The recirculation ballot will be held after the drafting team responds to voter comments submitted during this ballot.

The initial ballot for an interpretation of IRO-010-1 — Reliability Coordinator Data Specification and Collection, Requirements R1.2 and R3, for the Western Electricity Coordinating Council (WECC) Reliability Coordination Subcommittee ended May 1, 2009. The ballot results are shown below. The [Ballot Results](#) Web page provides a link to the detailed results.

Quorum:	88.64%
Approval:	84.77%

#### **Ballot Criteria**

Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and
- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.

#### **Project Background**

The WECC Reliability Coordination Subcommittee is seeking clarification on 1) the type of data to be supplied to the Reliability Coordinator, 2) which entities are ultimately responsible for ensuring data are provided, and 3) what actions are expected of the Reliability Coordinator regarding a “mutually acceptable format.” The request and interpretation can be found on the project page:

<http://www.nerc.com/filez/standards/Project2009-11 Interpretation IRO-010-1 WECC RCS.html>

#### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,  
please contact Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*

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-Ballot Results  
-Registered Ballot Body  
-Proxy Voters

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## Ballot Results

<b>Ballot Name:</b>	Project 2009-11 Interpretation WECC Reliability Coordination Subcommittee IRO-10-1_in
<b>Ballot Period:</b>	4/22/2009 - 5/1/2009
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	195
<b>Total Ballot Pool:</b>	220
<b>Quorum:</b>	<b>88.64 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	84.77 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

## Summary of Ballot Results

Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote
			# Votes	Fraction	# Votes	Fraction		
1 - Segment 1.	58	1	41	0.872	6	0.128	5	6
2 - Segment 2.	9	0.6	5	0.5	1	0.1	2	1
3 - Segment 3.	53	1	38	0.884	5	0.116	2	8
4 - Segment 4.	14	1	10	0.909	1	0.091	2	1
5 - Segment 5.	43	1	30	0.857	5	0.143	4	4
6 - Segment 6.	22	1	15	0.882	2	0.118	1	4
7 - Segment 7.	0	0	0	0	0	0	0	0
8 - Segment 8.	5	0.3	2	0.2	1	0.1	1	1
9 - Segment 9.	9	0.7	5	0.5	2	0.2	2	0
10 - Segment 10.	7	0.6	5	0.5	1	0.1	1	0
<b>Totals</b>	<b>220</b>	<b>7.2</b>	<b>151</b>	<b>6.104</b>	<b>24</b>	<b>1.096</b>	<b>20</b>	<b>25</b>

## Individual Ballot Pool Results

Segment	Organization	Member	Ballot	Comments
1	Ameren Services	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Avista Corp.	Scott Kinney	Negative	<a href="#">View</a>
1	BC Transmission Corporation	Gordon Rawlings	Negative	<a href="#">View</a>
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Brazos Electric Power Cooperative, Inc.	Tony Kroskey	Negative	<a href="#">View</a>



1	Central Maine Power Company	Brian Conroy	Affirmative	
1	Cleco Power LLC	Danny McDaniel	Abstain	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils		
1	E.ON U.S. LLC	Larry Monday		
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	Farmington Electric Utility System	Alan Glazner	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Abstain	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Affirmative	
1	JEA	Ted E. Hobson	Affirmative	
1	Kansas City Power & Light Co.	Michael Gammon	Affirmative	
1	Kissimmee Utility Authority	Joe B Watson	Affirmative	
1	Lee County Electric Cooperative	Rodney Hawkins	Abstain	
1	Lincoln Electric System	Doug Bantam	Affirmative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	MEAG Power	Danny Dees	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Affirmative	
1	National Grid	Manuel Couto	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Kevin M Largura	Affirmative	
1	Ohio Valley Electric Corp.	Robert Matthey	Affirmative	
1	Omaha Public Power District	Iorees Tadros	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Negative	<a href="#">View</a>
1	PacifiCorp	Mark Sampson		
1	Portland General Electric Co.	Frank F. Afranji		
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PowerSouth Energy Cooperative	Larry D Avery	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Puget Sound Energy, Inc.	Catherine Koch	Abstain	
1	Salt River Project	Robert Kondziolka	Negative	<a href="#">View</a>
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Sierra Pacific Power Co.	Richard Salgo	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Abstain	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Transmission Agency of Northern California	James W. Beck	Affirmative	
1	Tucson Electric Power Co.	John Tolo	Negative	
1	Westar Energy	Allen Klassen		
1	Western Area Power Administration	Brandy A Dunn	Affirmative	<a href="#">View</a>
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Abstain	<a href="#">View</a>
2	British Columbia Transmission Corporation	Phil Park	Negative	<a href="#">View</a>
2	California ISO	Greg Tillitson	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Abstain	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli		
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
2	Southwest Power Pool	Charles H Yeung	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services	Mark Peters	Affirmative	
3	American Electric Power	Raj Rana	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	

3	Black Hills Power	Andy Butcher		
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City of Tallahassee	Rusty S. Foster		
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Cowlitz County PUD	Russell A Noble	Affirmative	<a href="#">View</a>
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Detroit Edison Company	Kent Kujala	Affirmative	
3	Douglas County PUD #1	Jeff Johnson		
3	Duke Energy Carolina	Henry Ernst-Jr	Affirmative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Grays Harbor PUD	Wesley W Gray	Affirmative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Idaho Power Company	Shaun Jensen	Negative	<a href="#">View</a>
3	JEA	Garry Baker	Affirmative	
3	Kansas City Power & Light Co.	Charles Locke	Affirmative	
3	Kissimmee Utility Authority	Gregory David Woessner		
3	Lincoln Electric System	Bruce Merrill	Affirmative	
3	Los Angeles Department of Water & Power	Kenneth Silver		
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Michael Lupo	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Abstain	
3	PacifiCorp	John Apperson	Affirmative	
3	PECO Energy an Exelon Co.	John J. McCawley		
3	Platte River Power Authority	Terry L Baker	Negative	<a href="#">View</a>
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Public Utility District No. 1 of Chelan County	Kenneth R. Johnson	Affirmative	
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Negative	<a href="#">View</a>
3	San Diego Gas & Electric	Scott Peterson		
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Southern California Edison Co.	David Schiada	Negative	
3	Tampa Electric Co.	Ronald L. Donahey		
3	Turlock Irrigation District	Casey Hashimoto	Negative	
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Affirmative	<a href="#">View</a>
4	American Municipal Power - Ohio	Kevin L Holt	Affirmative	
4	Consumers Energy	David Frank Ronk	Affirmative	
4	Detroit Edison Company	Daniel Herring	Affirmative	
4	Georgia System Operations Corporation	Guy Andrews	Affirmative	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Affirmative	
4	Northern California Power Agency	Fred E. Young	Negative	<a href="#">View</a>
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	<a href="#">View</a>
4	Old Dominion Electric Coop.	Mark Ringhausen	Abstain	
4	Public Utility District No. 1 of Douglas County	Henry E. LuBean	Affirmative	
4	Sacramento Municipal Utility District	Dilip Mahendra	Abstain	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace		
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Negative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	Calpine Corporation	John Brent Hebert	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	

5	Consumers Energy	James B Lewis	Affirmative	
5	Dairyland Power Coop.	Warren Schaefer	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Abstain	
5	Duke Energy	Robert Smith	Affirmative	
5	East Kentucky Power Coop.	Stephen Ricker		
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	FPL Energy	Benjamin Church	Negative	<a href="#">View</a>
5	JEA	Donald Gilbert	Affirmative	
5	Kansas City Power & Light Co.	Scott Heidtbrink	Affirmative	
5	Liberty Electric Power LLC	Daniel Duff		
5	Lincoln Electric System	Dennis Florom	Affirmative	
5	Louisville Gas and Electric Co.	Charlie Martin	Affirmative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	MidAmerican Energy Co.	Christopher Schneider	Abstain	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Northern Indiana Public Service Co.	Michael K Wilkerson	Affirmative	
5	Northern States Power Co.	Liam Noailles	Affirmative	
5	Orlando Utilities Commission	Richard Kinas	Affirmative	
5	PacifiCorp Energy	David Godfrey	Affirmative	
5	Portland General Electric Co.	Gary L. Tingley	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis		
5	PSEG Power LLC	Thomas Piascik	Affirmative	
5	Reliant Energy Services	Thomas J. Bradish	Negative	<a href="#">View</a>
5	Salt River Project	Glen Reeves	Negative	<a href="#">View</a>
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	South California Edison Company	Ahmad Sanati	Negative	
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Tampa Electric Co.	Frank L Busot	Abstain	
5	Tenaska, Inc.	Scott M. Helyer	Abstain	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Affirmative	
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Wisconsin Public Service Corp.	Leonard Rentmeester	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Ameren Energy Marketing Co.	Jennifer Richardson	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Abstain	
6	Duke Energy Carolina	Walter Yeager	Affirmative	
6	Entergy Services, Inc.	Terri F Benoit	Affirmative	
6	Eugene Water & Electric Board	Daniel Mark Bedbury		
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>
6	Kansas City Power & Light Co.	Thomas Saitta	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Affirmative	
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	Northern Indiana Public Service Co.	Joseph O'Brien	Affirmative	
6	PacifiCorp	Gregory D Maxfield	Affirmative	
6	Progress Energy	James Eckelkamp	Affirmative	
6	PSEG Energy Resources & Trade LLC	James D. Hebson	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen		
6	Salt River Project	Mike Hummel	Negative	<a href="#">View</a>
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak		
6	Southern California Edison Co.	Marcus V Lotto	Negative	
6	Tenaska Power Services Co.	Carolina M Price		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
8	Edward C Stein	Edward C Stein	Negative	
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent		
8	Utility Services LLC	Brian Evans-Mongeon	Affirmative	
8	Volkman Consulting, Inc.	Terry Volkman	Abstain	
9	California Energy Commission	William Mitchell Chamberlain	Affirmative	
9	Commonwealth of Massachusetts Department	Donald E. Nelson	Affirmative	



	of Public Utilities			
9	Maine Public Utilities Commission	Jacob A McDermott	<a href="#">Abstain</a>	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	<a href="#">Affirmative</a>	
9	New York State Department of Public Service	Thomas G Dvorsky	<a href="#">Affirmative</a>	
9	Oregon Public Utility Commission	Jerome Murray	<a href="#">Negative</a>	<a href="#">View</a>
9	Public Service Commission of South Carolina	Philip Riley	<a href="#">Affirmative</a>	
9	Public Utilities Commission of Ohio	Klaus Lambeck	<a href="#">Abstain</a>	
9	Utah Public Service Commission	Ric Campbell	<a href="#">Negative</a>	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	<a href="#">Affirmative</a>	
10	Florida Reliability Coordinating Council	Linda Campbell	<a href="#">Abstain</a>	
10	New York State Reliability Council	Alan Adamson	<a href="#">Affirmative</a>	
10	Northeast Power Coordinating Council, Inc.	Guy V. Zito	<a href="#">Affirmative</a>	
10	ReliabilityFirst Corporation	Jacque Smith	<a href="#">Affirmative</a>	
10	SERC Reliability Corporation	Carter B. Edge	<a href="#">Affirmative</a>	
10	Western Electricity Coordinating Council	Louise McCarren	<a href="#">Negative</a>	<a href="#">View</a>

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## Consideration of Comments for Initial Ballot of Interpretation of IRO-010-1 Requirements R1.2 and R3 for the WECC Reliability Coordination Subcommittee (Project 2009-11)

**Summary Consideration:** Many who submitted comments indicated disagreement with the drafting team’s response to Question 3. The IROL standards drafting team (SDT) did not intend for the interpretation to dictate there be only one mutually agreeable format for all data and information exchange. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it. The statement “The WECC RC staff believes that the current formats are reasonable, and that they work with the current processes and tools” is the intent of the interpretation. Others offering comments asked for clarification on the dispute resolution process. The SDT did not think it appropriate to dictate a dispute resolution process in the interpretation. In many cases, the entities in dispute will be from the same Region; therefore, that Region’s dispute resolution process would be appropriate. However, some disputes will cross Regions or even involve more than two Regions. In those cases, the parties could agree to abide by any involved Region’s dispute resolution process.

The IROL SDT did not make any changes based on the comments received. If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

Voter	Entity	Segment	Vote	Comment
Scott Kinney	Avista Corp.	1	Negative	I support interpretation 1 and 2 but feel interpretation 3 is still ambiguous. The RC staff is required to collect and utilize a considerable amount of data. The language of the interpretation may mean that there can be many different negotiated methods that may or may not be a format that is in use now. The language of the interpretation may also mean there needs to be ONE agreement with all parties in the region as to what constitutes an agreeable format. Interpretation 3 still needs clarity in order for the RC staff to perform their duties.

<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

Voter	Entity	Segment	Vote	Comment
<p><b>Response: The IROL SDT thanks you for your comment. A “mutually agreeable format” does not necessarily require negotiations. However, if a proposed format is not mutually agreeable, it is each entity’s obligation to negotiate an acceptable format. The IROL SDT language means format differences are recognized by our industry and allows for flexibility of technology, agreeable methods, and reasoned discourse to close the gap of formatting. Certainly it would be incumbent upon the RC to seek common industry applications and practices for sharing data and information.</b></p>				
Gordon Rawlings	BC Transmission Corporation	1	Negative	"R1.2 of the standard is acceptable as approved and no interpretation is necessary. Responsible parties are able to work out a "mutually acceptable format" for themselves. The interpretation may be interpreted by some to limit or require the determination of a "mutually acceptable format" to negotiations and dispute resolution."
Phil Park	British Columbia Transmission Corporation	2	Negative	R1.2 of the standard is acceptable as approved and no interpretation is necessary. Responsible parties are able to work out a "mutually acceptable format" for themselves. The interpretation may be interpreted by some to limit or require the determination of a "mutually acceptable format" to negotiations and dispute resolution.
<p><b>Response: The IROL SDT thanks you for your comment. We agree. A “mutually agreeable format” does not necessarily require negotiations. However, if a proposed format is not mutually agreeable, it is each entity’s obligation to negotiate an acceptable format.</b></p>				
Robert Kondziolka	Salt River Project	1	Negative	Requirement R1.2 mandates that the parties will reach a mutual agreement with respect to the format of the data and information. If the parties can not mutually agree on the format, it is expected that they will negotiate to reach agreement or enter into dispute resolution to resolve the disagreement. However, it is not reasonable to expect the Reliability Coordinator to negotiate with every entity to achieve consistent a consistent format. Dispute resolution is not a good option for this type of issue and is not timely.
<p><b>Response: The IROL SDT thanks you for your comment. It is not anticipated or expected that an RC will need to negotiate with each entity for a “mutually agreeable format.” The IROL SDT language means format differences are recognized by our industry and allows for</b></p>				

Voter	Entity	Segment	Vote	Comment
<p><b>flexibility of technology, agreeable methods, and reasoned discourse to close the gap of formatting. Certainly it would be incumbent upon the RC to seek common industry applications and practices for sharing data and information.</b></p>				
Shaun Jensen	Idaho Power Company	3	Negative	<p>The WECC RC staff currently receives data from approximately 45 entities in the Western Interconnection. The response to question 3 does not provide any clarity to address the ambiguity associated with the language of Requirement 1.2. The language of the interpretation may mean that there can be as many as 45 different negotiated methods that may or may not be a format that is in use now. The language of the interpretation may also mean there needs to be ONE agreement with all parties in the region as to what constitutes an agreeable format. The WECC RC staff is concerned over the impact of any change with current formats. The most significant problem would be the interpretation that each entity is required to have a formal documented agreeable format. The WECC RC department is not staffed to manage this nor is it in the interest of continuity of service (which equates to reliability) if the sending entity chooses to not send data until the agreeable format is resolved. The WECC RC staff believes that the current formats are reasonable, and that they work with the current processes and tools. They further believe that the WECC RC department should have only one agreement with entities under its jurisdiction if a format change is required.</p>
<p><b>Response: The IROL SDT thanks you for your comment. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it. The statement “The WECC RC staff believes that the current formats are reasonable, and that they work with the current processes and tools” is the intent of the interpretation.</b></p>				
Terry L Baker	Platte River Power Authority	3	Negative	<p>PRPA agrees with the answers the proposed Interpretation provides for Questions #1 and #2. However, we do not agree with the answer provided for Question #3. The proposed Interpretation states If the parties can not mutually agree on the format, it is expected that they will negotiate to reach agreement or enter into dispute resolution to resolve the disagreement. The WECC Reliability Coordination offices gather system reliability data from approximately 45 different Balancing</p>

Voter	Entity	Segment	Vote	Comment
				<p>Authorities and Transmission Operators. PRPA understands that each of these entities may not want to be forced to use a data exchange format that is costly to implement. However, the Interpretation suggests that the Reliability Coordination function could potentially have to negotiation a different mutually acceptable format with each of the 45 entities within its footprint. In addition, the Interpretation suggests that the entities enter into the dispute resolution to resolve the disagreement. Dispute Resolution processes are time consuming and not conducive to achieving the system reliability objectives of the NERC Standards. PRPA suggests that the Interpretation be modified to recommend a mutually agreeable format that can be determined by the Regional Reliability Organization.</p>
<p><b>Response: The IROL SDT thanks you for your comment. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it. The SDT did not think it appropriate to dictate a dispute resolution process. In many cases, the entities in dispute will be from the same Region; therefore, that Region’s dispute resolution process would be appropriate. However, some disputes will cross Regions or even involve more than two Regions. In those cases, the parties could agree to abide by any involved Region’s dispute resolution process.</b></p>				
<p>John T. Underhill  Glen Reeves  Mike Hummel</p>	<p>Salt River Project</p>	<p>3  5  6</p>	<p>Negative</p>	<p>SRP agrees with the answers the proposed Interpretation provides for Questions #1 and #2. However, we do not agree with the answer provided for Question #3. The proposed Interpretation states "If the parties can not mutually agree on the format, it is expected that they will negotiate to reach agreement or enter into dispute resolution to resolve the disagreement" The WECC Reliability Coordination offices gather system reliability data from approximately 45 different Balancing Authorities and Transmission Operators. SRP understands that each of these entities may not want to be forced to use a data exchange format that is costly to implement. However, the Interpretation suggests that the Reliability Coordination function could potentially have to negotiation a different mutually acceptable format with each of the 45 entities within its footprint. In addition, the Interpretation suggests that the entities enter into the dispute resolution to resolve the disagreement. Dispute Resolution processes are time consuming and not conducive to achieving the system reliability objectives of the NERC Standards.</p>



Voter	Entity	Segment	Vote	Comment
				SRP suggests that the Interpretation be modified to recommend a mutually agreeable format that can be determined by the Regional Reliability Organization.
<p><b>Response:</b> The IROL SDT thanks you for your comment. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it. The SDT did not think it appropriate to dictate a dispute resolution process. In many cases, the entities in dispute will be from the same Region; therefore, that Region’s dispute resolution process would be appropriate. However, some disputes will cross Regions or even involve more than two Regions. In those cases, the parties could agree to abide by any involved Region’s dispute resolution process.</p>				
Thomas J. Bradish	Reliant Energy Services	5	Negative	<p>Reliant votes NO for the reasons cited in the WECC position paper on this matter namely: The WECC Reliability Coordination (RC) staff was asked to provide their perspective on the IRO-010-1 interpretation. The WECC RC staff provided the following information regarding the recommendation to vote NO: 1. The WECC Reliability Coordination staff agrees with the interpretation language for the response to question number 1. 2. The proposed interpretation for question 2 provides clarity. However, the result is more work on the part of the WECC RC staff. This is due to the original assumption that the WECC RC department would receive the bulk of data from balancing authorities as it has in the past. This interpretation may result in an increase in the number of entities that perceive an obligation under this interpretation to provide their data directly. The WECC RC staff is not opposed to this interpretation but regrets the inefficiencies in managing data request obligations on a much more granular level. This will have a direct impact on WECC RC staffing needs. 3. The WECC RC staff finds the language in the proposed interpretation for question 3 to be ambiguous and problematic in several key areas. Currently the WECC RC staff receives data in four significant formats as follows: a) ICCP (Inter Control Center Communication Protocol) “Used for transmitting large amounts of real-time data from measurements around the interconnection for real-time displays, tools, and advanced applications. b) EIDE data (Electric Industry Data Exchange) “Used for entities to transmit schedule type data such as load forecast, interchange schedules, unit commitment, etc., for RC next-day studies. c) Coordinated Outage System (COS)</p>

Voter	Entity	Segment	Vote	Comment
				<p>‘ Used for outages planned for the next-day study process and RC situational awareness. d) Topology updates (model updates) of data from around the interconnection ‘ Used as a foundation for real-time applications, situational awareness, and a host of tools to facilitate analyses of the RC staff. The format is in specific templates and information. There are other requests that involve no specific format (single-line displays, e-mail notifications, etc.). The WECC RC staff currently receives data from approximately 45 entities in the Western Interconnection. The response to question 3 does not provide any clarity to address the ambiguity associated with the language of Requirement 1.2. The language of the interpretation may mean that there can be as many as 45 different negotiated methods that may or may not be a format that is in use now. The language of the interpretation may also mean there needs to be ONE agreement with all parties in the region as to what constitutes an agreeable format. The WECC RC staff is concerned over the impact of any change with current formats. The most significant problem would be the interpretation that each entity is required to have a formal documented agreeable format. The WECC RC department is not staffed to manage this nor is it in the interest of continuity of service (which equates to reliability) if the sending entity chooses to not send data until the agreeable format is resolved. The WECC RC staff believes that the current formats are reasonable, and that they work with the current processes and tools. They further believe that the WECC RC department should have only one agreement with entities under its jurisdiction if a format change is required. An interpretation cannot be used to change a standard. If the interpretation is approved by its ballot pool, then the interpretation will be appended to the standard and will become effective when adopted by the NERC Board of Trustees, and approved by the applicable regulatory authorities, including FERC. The interpretation will remain appended to the standard until the standard is revised through the normal standards development process. When the standard is revised, the clarifications provided by the interpretation will be incorporated into the revised standard.</p>

Voter	Entity	Segment	Vote	Comment
<p><b>Response:</b> The IROL SDT thanks you for your comment.</p>				
<p><b>Question 2.</b> The interpretation of this question simply states that each entity is responsible for supplying the RC with its data. If that entity has another entity that satisfactorily supplies the data to the RC, then that is acceptable. The requirement still applies to the obligated entity.</p>				
<p><b>Question 3.</b> A “mutually agreeable format” does not necessarily require negotiations. However, if a proposed format is not mutually agreeable, it is each entity’s obligation to negotiate an acceptable format. The IROL SDT language means format differences are recognized by our industry and allows for flexibility of technology, agreeable methods, and reasoned discourse to close the gap of formatting. Certainly it would be incumbent upon the RC to seek common industry applications and practices for sharing data and information. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it.</p>				
Jerome Murray	Oregon Public Utility Commission	9	Negative	<p>The response to question 3 does not provide any clarity to address the ambiguity associated with the language of Requirement 1.2. The language of the interpretation may mean that there can be as many as 45 different negotiated methods that may or may not be a format that is in use now. The language of the interpretation may also mean there needs to be ONE agreement with all parties in the region as to what constitutes an agreeable format. The WECC RC staff is concerned over the impact of any change with current formats. The most significant problem would be the interpretation that each entity is required to have a formal documented agreeable format. The WECC RC department is not staffed to manage this nor is it in the interest of continuity of service (which equates to reliability) if the sending entity chooses to not send data until the agreeable format is resolved. The WECC RC staff believes that the current formats are reasonable, and that they work with the current processes and tools. They further believe that the WECC RC department should have only one agreement with entities under its jurisdiction if a format change is required.</p>
<p><b>Response:</b> The IROL SDT thanks you for your comment. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is</p>				

Voter	Entity	Segment	Vote	Comment
<p><b>designed to require “what” an entity must do, not “how” to do it. The statement “The WECC RC staff believes that the current formats are reasonable, and that they work with the current processes and tools” is the intent of the interpretation.</b></p>				
Louise McCarren	Western Electricity Coordinating Council	10	Negative	Historically WECC RCs have received data from the BAs. This interpretation may result in an increase in the number of entities that perceive an obligation to provide their data directly to the RC. The response to question 3 does not provide the clarity required to address the ambiguity associated with the language of Requirement 1.2. The language of the interpretation may mean that there can be as many different negotiated methods as there are entities providing data to the RC. Alternatively the interpretation may mean there needs to be ONE agreement describing what constitutes a mutually agreeable format with all parties in the region. The most significant problem with these two potential interpretations would be that each entity is required to have a formal documented mutually agreeable format. This may create a volume of work that the WECC RC department is not staffed to accommodate. In addition, it is not in the interest of continuity of service (which equates to reliability) if the sending entity chooses to not send data until this term is defined.
<p><b>Response: The IROL SDT thanks you for your comment.</b></p> <p><b>The interpretation Question 2 simply states that each entity is responsible for supplying the RC with its data. If the responsible entity has another entity that satisfactorily supplies the data to the RC, then that is acceptable. The requirement still applies to the obligated entity.</b></p> <p><b>A “mutually agreeable format” does not necessarily require negotiations. However, if a proposed format is not mutually agreeable, it is each entity’s obligation to negotiate an acceptable format. The IROL SDT language means format differences are recognized by our industry and allows for flexibility of technology, agreeable methods, and reasoned discourse to close the gap of formatting. Certainly it would be incumbent upon the RC to seek common industry applications and practices for sharing data and information. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it.</b></p>				
Brandy A Dunn	Western Area Power	1	Affirmative	COMMENTS REGARDING QUESTION #2: Transferring the responsibility of Transmission Operator reporting to the Balancing Authority places the Balancing Authority into a position of being between the Reliability Coordinator and the

Voter	Entity	Segment	Vote	Comment
	Administration			<p>Transmission Operator. This could have compliance obligations that would impact the Balancing Authority. Also, the Balancing Authority would become the entity that the Reliability Coordinator would go to with questions about the data. The Balancing Authority would become an extra, unnecessary link in communication between the Reliability Coordinator and the Transmission Operator. It is unclear when any direct communication between the Reliability Coordinator and the Transmission Operator would occur. This could lead to Balancing Authorities receiving directives from the Reliability Coordinator for Transmission Operator real-time issues. The functional responsibility should remain with the functional model entity assigned that responsibility. Saving resources for the Reliability Coordinator means having to commit more resources by the Balancing Authority. The responsibility of coordinating with the Transmission Operator lies with the Reliability Coordinator. This cost of doing Reliability Coordinator business should not be passed on to the Balancing Authorities. If more resources are required by the Reliability Coordinator to meet these obligations, then that is what should be done. COMMENTS REGARDING QUESTIONS #3: The Reliability Coordinator should work with entities to determine the method of data and information transfer, not dictate the method to be used. This should be a collaborative process. Receiving data "requests" from the Reliability Coordinator that are not perceived as "reasonable" does not build collaborative relationships between the functional entities and the Reliability Coordinator. There should be a sense of working together to solve issues of data and information transfer, not a feeling that a requirement is dictated without any process for stakeholder input.</p>

**Response:** The IROL SDT thanks you for your comment.

**Question 2 Comment:** The interpretation of this question simply states that each entity is responsible for supplying the RC with its data. If that entity has another entity that satisfactorily supplies the data to the RC, then that is acceptable. The requirement still applies to the obligated entity. The requirement is not dictating the method for data exchange, only that the data be exchanged.

**Question 3:** If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity

Voter	Entity	Segment	Vote	Comment
<b>must do, not “how” to do it.</b>				
Chifong L. Thomas	Pacific Gas and Electric Company	1	Negative	<p>1. PG&amp;E agrees with the interpretation language for the response to question number 1. 2. PG&amp;E is not opposed to interpretation of question number 2. However, we are concerned about the resulting inefficiencies in managing data request obligations on a much more granular level. This interpretation will have a direct impact on WECC RC staffing needs with no increase in reliability. Though the proposed interpretation for question number 2 provides clarity, the result is more work on the part of the WECC RC staff. The WECC RC department would receive the bulk of data from balancing authorities; this interpretation may result in an increase in the number of entities that perceive an obligation under this interpretation to provide their data directly. 3. PG&amp;E finds the language in the proposed interpretation for question number 3 to be ambiguous and problematic in several key areas. Currently the WECC RC staff receives data in four significant formats in addition to other requests that involve no specific format (single-line displays, e-mail notifications, etc.). The WECC RC staff currently receives data from approximately 45 entities in the Western Interconnection. The response to question number 3 does not provide any clarity to address the ambiguity associated with the language of Requirement 1.2. The language of the interpretation may mean that there can be as many as 45 different negotiated methods that may or may not be a format that is in use now. The language of the interpretation may also mean there needs to be ONE agreement with all parties in the region as to what constitutes an agreeable format. We are also concerned over the impact of any change with current formats. The most significant problem would be the interpretation that each entity is required to have a formal documented agreeable format. This interpretation would not help continuity of service (which equates to reliability) if the sending entity chooses to not send data until the agreeable format is resolved.</p>

**Response:** The IROL SDT thanks you for your comment.

**2:** The interpretation of this question simply states that each entity is responsible for supplying the RC with its data. If that entity has

Voter	Entity	Segment	Vote	Comment
<p>another entity that satisfactorily supplies the data to the RC, then that is acceptable. The requirement still applies to the obligated entity. The requirement is not dictating the method for data exchange, only that the data be exchanged.</p>				
<p>3: A “mutually agreeable format” does not necessarily require negotiations. However, if a proposed format is not mutually agreeable, it is each entity’s obligation to negotiate an acceptable format. The IROL SDT language means format differences are recognized by our industry and allows for flexibility of technology, agreeable methods, and reasoned discourse to close the gap of formatting. Certainly it would be incumbent upon the RC to seek common industry applications and practices for sharing data and information. If the RC has a current data exchange format or formats with any entity or entities with which they have a reliability relationship, then that is acceptable. Many formats for data exchange exist today. The standard is designed to require “what” an entity must do, not “how” to do it.</p>				
Benjamin Church	FPL Energy	5	Negative	<p>Interpretation fails to answer Question #1. The issue of "any" data is critical and should be explained as requested by the Interpretation. Response to Question #3 creates additional ambiguity. Standard requires for parties to reach a "mutually agreed upon format." The response to Question #3 then adds the term "information" to the agreement. Format and information are very different terms and it is not clear if the respondents are intending to include content as well as structure in the consensus agreement. Also, the response to Question #3 introduces the concept of a "dispute resolution" process that is not clearly defined in the Rules of Procedure. This creates additional ambiguity and further obscures the standard.</p>
<p><b>Response:</b> The IROL SDT thanks you for your comment.</p>				
<p><b>Question 1:</b> The interpretation states that the data to be supplied in Requirement R3 applies to the documented specification for data and information referenced in Requirement R1. The second part of the question (relating to “any data”) is moot because the interpretation applies only to the data specified in R1.</p>				
<p><b>Question 3:</b> R1 states “...shall have a documented specification for data and information...”; the drafting team did not add the term “information” to the requirement. R1.2 specifies that the specification will include “mutually agreeable format.”</p>				
<p>The SDT did not think it appropriate to dictate a dispute resolution process. In many cases, the entities in dispute will be from the same Region; therefore, that Region’s dispute resolution process would be appropriate. However, some disputes will cross Regions or even involve more than two Regions. In those cases, the parties could agree to abide by any involved Region’s dispute resolution process.</p>				

Voter	Entity	Segment	Vote	Comment
Tony Kroskey	Brazos Electric Power Cooperative, Inc.	1	Negative	Response to Question #2 needs further consideration for instances where an RC provides data to another RC. Do the responsible entities to the first RC also need to "ensure" that the second RC has received the "specified" data? Response to Question #3 needs further clarity. Also what compliance issue does this raise during the time that negotiations are in progress?
<p><b>Response: The IROL SDT thanks you for your comment.</b></p> <p><b>Question 2: Each responsible entity has only one RC and is therefore only required to provide data and information to that RC. If two or more RC's are sharing data, the responsible entity is not required to provide the data or information to the second RC.</b></p> <p><b>Question 3: We can not assess your issue for question 3 that it needs "further clarity" without further explanation of the context of your comment. We can not speak for NERC or Regional Compliance regarding compliance issues "during the time negotiations are in progress."</b></p>				
Joanne Kathleen Borrell	FirstEnergy Solutions	3	Affirmative	In regards to question 1 - we agree with the response provided. However, this interpretation response should trigger a revision to standard IRO-010, requirement R3 for clarity. The phrase "as specified" should be replaced with "as specified and developed per requirement R1." In regards to question 2 - we agree with the response provided. In regards to question 3 - we agree with the response but the question raised points to some adjusting needed in the standard for clarity. A potential problem from a compliance standpoint is that requirement R1 is only explicitly applicable to the RC. This could cause compliance issues for an RC who can not come to an agreement with one or more entities. Either R1.2 should be expanded or a new sub-requirement of R1 should be added that requires the RC to document a "dispute resolution mechanism" (similar to NUC-001-1 R9.1.4) to protect both its own interest and the interest of the entities that it monitors. The suggested changes could be captured in the 5-year review cycle required by NERC for all of its reliability standards.
Kenneth Dresner		5		
Mark S Travaglianti		6		
Robert Martinko	FirstEnergy Energy Delivery	1	Affirmative	In regards to question 1 - we agree with the response provided. However, this interpretation response should trigger a revision to standard IRO-010, requirement



Voter	Entity	Segment	Vote	Comment
				<p>R3 for clarity. The phrase "as specified" should be replaced with "as specified and developed per requirement R1." In regards to question 2 - we agree with the response provided. In regards to question 3 - we agree with the response but the question raised points to some adjusting needed in the standard for clarity. A potential problem from a compliance standpoint is that requirement R1 is only explicitly applicable to the RC. This could cause compliance issues for an RC who can not come to an agreement with one or more entities. Either R1.2 should be expanded or a new sub-requirement of R1 should be added that requires the RC to document a "dispute resolution mechanism" (similar to NUC-001-1 R9.1.4) to protect both its own interest and the interest of the entities that it monitors. The suggested changes could be captured in the 5-year review cycle required by NERC for all of its reliability standards.</p>
Douglas Hohlbaugh	Ohio Edison Company	4	Affirmative	<p>In regards to question 1 - we agree with the response provided. However, this interpretation response should trigger a revision to standard IRO-010, requirement R3 for clarity. The phrase "as specified" should be replaced with "as specified and developed per requirement R1." In regards to question 2 - we agree with the response provided. In regards to question 3 - we agree with the response but the question raised points to some adjusting needed in the standard for clarity. A potential problem from a compliance standpoint is that requirement R1 is only explicitly applicable to the RC. This could cause compliance issues for an RC who can not come to an agreement with one or more entities. Either R1.2 should be expanded or a new sub-requirement of R1 should be added that requires the RC to document a "dispute resolution mechanism" (similar to NUC-001-1 R9.1.4) to protect both its own interest and the interest of the entities that it monitors. The suggested changes could be captured in the 5-year review cycle required by NERC for all of its reliability standards.</p>

**Response:** The IROL SDT thanks you for your comment. We will submit your comment to the NERC Manager of Standards Development as input to the NERC standards issues database for consideration during the next revision of this standard.

Voter	Entity	Segment	Vote	Comment
Anita Lee	Alberta Electric System Operator	2	Abstain	The AESO would like to cast an "abstention" vote to the overall ballot, but would also like to indicate our support to the interpretation to Q3. We do not, however, hold a position regarding the interpretation to either Q1 or Q2.
<b>Response: The IROL SDT thanks you for your comment.</b>				
Kenneth Goldsmith	Alliant Energy Corp. Services, Inc.	4	Affirmative	Please define the Dispute Resolution process as requested in question 3.
<b>Response: The IROL SDT thanks you for your comment. The SDT did not think it appropriate to dictate a dispute resolution process. In many cases, the entities in dispute will be from the same Region; therefore, that Region's dispute resolution process would be appropriate. However, some disputes will cross Regions or even involve more than two Regions. In those cases, the parties could agree to abide by any involved Region's dispute resolution process.</b>				
Thomas C. Mielnik	MidAmerican Energy Co.	3	Affirmative	Please define the Dispute Resolution Process in response to Question 3. Note: Unable to find information on the Dispute Resolution Process for Standards in the NERC Rules of Procedure.
<b>Response: The IROL SDT thanks you for your comment. The SDT did not think it appropriate to dictate a dispute resolution process. In many cases, the entities in dispute will be from the same Region; therefore, that Region's dispute resolution process would be appropriate. However, some disputes will cross Regions or even involve more than two Regions. In those cases, the parties could agree to abide by any involved Region's dispute resolution process.</b>				
Russell A Noble	Cowlitz County PUD	3	Affirmative	The SDT has adequately provided an interpretation. However, I believe there are gaps in the standards in general in providing the means by which reasonable required modeling data is established, and a realistic time frame for obtaining the data values. MOD-012-0 is a prime example of this problem. I have great hopes that the current revision process will address this problem. Thank you for the clear and concise interpretation.

Voter	Entity	Segment	Vote	Comment
<p><b>Response: The IROL SDT thanks you for your comment. We will submit your comment to the NERC Manager of Standards Development as input to the NERC standards issues database for consideration during the next revision of this standard.</b></p>				

## Standards Announcement Recirculation Ballot Window Open May 26–June 5, 2009

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

### **Interpretation of IRO-010-1 for the WECC Reliability Coordination Subcommittee (Project 2009-11)**

A recirculation ballot window for an interpretation of IRO-010-1 — Reliability Coordinator Data Specification and Collection, Requirements R1.2 and R3, for the Western Electricity Coordinating Council (WECC) Reliability Coordination Subcommittee is now open **until 8 p.m. EDT on June 5, 2009**.

### **Project Background**

The WECC Reliability Coordination Subcommittee is seeking clarification on 1) the type of data to be supplied to the Reliability Coordinator, 2) which entities are ultimately responsible for ensuring data are provided, and 3) what actions are expected of the Reliability Coordinator regarding a “mutually acceptable format.” The request and interpretation can be found on the project page:

[http://www.nerc.com/filez/standards/Project2009-11\\_Interpretation\\_IRO-010-1\\_WECC\\_RCS.html](http://www.nerc.com/filez/standards/Project2009-11_Interpretation_IRO-010-1_WECC_RCS.html)

### **Recirculation Ballot Process**

The Standards Committee encourages all members of the Ballot Pool to review the consideration of comments submitted with the initial ballots. In the recirculation ballot, votes are counted by exception only — if a Ballot Pool member does not submit a revision to that member’s original vote, the vote remains the same as in the first ballot. Members of the ballot pool may:

- Reconsider and change their vote from the first ballot.
- Vote in the second ballot even if they did not vote on the first ballot.
- Take no action if they do not want to change their original vote.

### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,  
please contact Shaun Streeter at [shaun.streeter@nerc.net](mailto:shaun.streeter@nerc.net) or at 609.452.8060.*

## Standards Announcement Final Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

### **Interpretation of IRO-010-1 for the Western Electricity Coordinating Council (WECC) Reliability Coordination Subcommittee (Project 2009-11)**

The ballot pool approved the standards revisions. The revised standards will be submitted to the NERC Board of Trustees for adoption.

The recirculation ballot for an interpretation of IRO-010-1 — Reliability Coordinator Data Specification and Collection, Requirements R1.2 and R3, for the WECC Reliability Coordination Subcommittee ended June 5, 2009. The final ballot results are shown below. The [Ballot Results](#) Web page provides a link to the detailed results.

Quorum:	90.45%
Approval:	85.76%

### **Ballot Criteria**

Approval requires both:

- A quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention; and
- A two-thirds majority of the weighted segment votes cast must be affirmative. The number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses.

### **Project Background**

The WECC Reliability Coordination Subcommittee is seeking clarification on 1) the type of data to be supplied to the Reliability Coordinator, 2) which entities are ultimately responsible for ensuring data are provided, and 3) what actions are expected of the Reliability Coordinator regarding a “mutually acceptable format.” The request and interpretation are posted on the project page:

<http://www.nerc.com/filez/standards/Project2009-11 Interpretation IRO-010-1 WECC RCS.html>

### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,  
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**Ballot Results**

<b>Ballot Name:</b>	Project 2009-11 Interpretation WECC Reliability Coordination Subcommittee IRO-10-1_rc
<b>Ballot Period:</b>	5/26/2009 - 6/5/2009
<b>Ballot Type:</b>	recirculation
<b>Total # Votes:</b>	199
<b>Total Ballot Pool:</b>	220
<b>Quorum:</b>	<b>90.45 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	85.76 %
<b>Ballot Results:</b>	<b>The Standard has Passed</b>

**Summary of Ballot Results**

Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain # Votes	No Vote
			# Votes	Fraction	# Votes	Fraction		
1 - Segment 1.	58	1	45	0.938	3	0.063	5	5
2 - Segment 2.	9	0.6	6	0.6	0	0	2	1
3 - Segment 3.	53	1	39	0.867	6	0.133	2	6
4 - Segment 4.	14	1	10	0.909	1	0.091	2	1
5 - Segment 5.	43	1	32	0.865	5	0.135	3	3
6 - Segment 6.	22	1	15	0.882	2	0.118	1	4
7 - Segment 7.	0	0	0	0	0	0	0	0
8 - Segment 8.	5	0.4	3	0.3	1	0.1	0	1
9 - Segment 9.	9	0.7	4	0.4	3	0.3	2	0
10 - Segment 10.	7	0.6	5	0.5	1	0.1	1	0
<b>Totals</b>	<b>220</b>	<b>7.3</b>	<b>159</b>	<b>6.261</b>	<b>22</b>	<b>1.04</b>	<b>18</b>	<b>21</b>

**Individual Ballot Pool Results**

Segment	Organization	Member	Ballot	Comments
1	Ameren Services	Kirit S. Shah	Affirmative	
1	American Electric Power	Paul B. Johnson	Affirmative	
1	American Transmission Company, LLC	Jason Shaver	Affirmative	
1	Avista Corp.	Scott Kinney	Negative	<a href="#">View</a>
1	BC Transmission Corporation	Gordon Rawlings	Affirmative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Brazos Electric Power Cooperative, Inc.	Tony Kroskey	Affirmative	<a href="#">View</a>

1	Central Maine Power Company	Brian Conroy	Affirmative	
1	Cleco Power LLC	Danny McDaniel	Abstain	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	Duke Energy Carolina	Douglas E. Hils	Affirmative	
1	E.ON U.S. LLC	Larry Monday		
1	East Kentucky Power Coop.	George S. Carruba		
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	Farmington Electric Utility System	Alan Glazner	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	<a href="#">View</a>
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Abstain	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Hoosier Energy Rural Electric Cooperative, Inc.	Damon Holladay	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	
1	Idaho Power Company	Ronald D. Schellberg	Affirmative	
1	ITC Transmission	Elizabeth Howell	Affirmative	
1	JEA	Ted E. Hobson	Affirmative	
1	Kansas City Power & Light Co.	Michael Gammon	Affirmative	
1	Kissimmee Utility Authority	Joe B Watson	Abstain	
1	Lee County Electric Cooperative	Rodney Hawkins	Affirmative	
1	Lincoln Electric System	Doug Bantam	Affirmative	
1	Manitoba Hydro	Michelle Rheault	Affirmative	
1	MEAG Power	Danny Dees	Affirmative	
1	Minnesota Power, Inc.	Carol Gerou	Affirmative	
1	National Grid	Manuel Couto	Affirmative	
1	New York Power Authority	Ralph Rufrano	Affirmative	
1	Northeast Utilities	David H. Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Kevin M Largura	Affirmative	
1	Ohio Valley Electric Corp.	Robert Matthey	Affirmative	
1	Omaha Public Power District	Iorees Tadros	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Negative	<a href="#">View</a>
1	PacifiCorp	Mark Sampson		
1	Portland General Electric Co.	Frank F. Afranji		
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PowerSouth Energy Cooperative	Larry D Avery	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Sammy Roberts	Affirmative	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Puget Sound Energy, Inc.	Catherine Koch	Abstain	
1	Salt River Project	Robert Kondziolka	Negative	<a href="#">View</a>
1	SaskPower	Wayne Guttormson	Affirmative	
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Sierra Pacific Power Co.	Richard Salgo	Affirmative	
1	Southern California Edison Co.	Dana Cabbell	Abstain	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Southwest Transmission Cooperative, Inc.	James L. Jones	Affirmative	
1	Transmission Agency of Northern California	James W. Beck	Affirmative	
1	Tucson Electric Power Co.	John Tolo	Affirmative	
1	Westar Energy	Allen Klassen		
1	Western Area Power Administration	Brandy A Dunn	Affirmative	<a href="#">View</a>
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Abstain	<a href="#">View</a>
2	British Columbia Transmission Corporation	Phil Park	Affirmative	
2	California ISO	Greg Tillitson	Affirmative	
2	Independent Electricity System Operator	Kim Warren	Affirmative	
2	ISO New England, Inc.	Kathleen Goodman	Abstain	
2	New Brunswick System Operator	Alden Briggs	Affirmative	
2	New York Independent System Operator	Gregory Campoli		
2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
2	Southwest Power Pool	Charles H Yeung	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Ameren Services	Mark Peters	Affirmative	
3	American Electric Power	Raj Rana	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	

3	Black Hills Power	Andy Butcher		
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	City of Tallahassee	Rusty S. Foster		
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy	David A. Lapinski	Affirmative	
3	Cowlitz County PUD	Russell A Noble	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Detroit Edison Company	Kent Kujala	Affirmative	
3	Douglas County PUD #1	Jeff Johnson		
3	Duke Energy Carolina	Henry Ernst-Jr	Affirmative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	<a href="#">View</a>
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Grays Harbor PUD	Wesley W Gray	Affirmative	
3	Gulf Power Company	Gwen S Frazier	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	
3	Idaho Power Company	Shaun Jensen	Negative	<a href="#">View</a>
3	JEA	Garry Baker	Affirmative	
3	Kansas City Power & Light Co.	Charles Locke	Affirmative	
3	Kissimmee Utility Authority	Gregory David Woessner		
3	Lincoln Electric System	Bruce Merrill	Affirmative	
3	Los Angeles Department of Water & Power	Kenneth Silver		
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	<a href="#">View</a>
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Michael Lupo	Affirmative	
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	
3	Northern Indiana Public Service Co.	William SeDoris	Affirmative	
3	Orlando Utilities Commission	Ballard Keith Mutters	Affirmative	
3	PacifiCorp	John Apperson	Affirmative	
3	PECO Energy an Exelon Co.	John J. McCawley	Abstain	
3	Platte River Power Authority	Terry L Baker	Negative	<a href="#">View</a>
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Public Utility District No. 1 of Chelan County	Kenneth R. Johnson	Negative	<a href="#">View</a>
3	Public Utility District No. 2 of Grant County	Greg Lange	Affirmative	
3	Salt River Project	John T. Underhill	Negative	<a href="#">View</a>
3	San Diego Gas & Electric	Scott Peterson		
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Southern California Edison Co.	David Schiada	Negative	
3	Tampa Electric Co.	Ronald L. Donahey	Affirmative	
3	Turlock Irrigation District	Casey Hashimoto	Negative	
3	Wisconsin Electric Power Marketing	James R. Keller	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Affirmative	<a href="#">View</a>
4	American Municipal Power - Ohio	Kevin L Holt	Affirmative	
4	Consumers Energy	David Frank Ronk	Affirmative	
4	Detroit Edison Company	Daniel Herring	Affirmative	
4	Georgia System Operations Corporation	Guy Andrews	Affirmative	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Affirmative	
4	Northern California Power Agency	Fred E. Young	Negative	<a href="#">View</a>
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	<a href="#">View</a>
4	Old Dominion Electric Coop.	Mark Ringhausen	Abstain	
4	Public Utility District No. 1 of Douglas County	Henry E. LuBean	Affirmative	
4	Sacramento Municipal Utility District	Dilip Mahendra	Abstain	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace		
4	Wisconsin Energy Corp.	Anthony Jankowski	Affirmative	
5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Negative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	Calpine Corporation	John Brent Hebert	Affirmative	
5	City of Tallahassee	Alan Gale	Affirmative	
5	Colmac Clarion/Piney Creek LP	Harvie D. Beavers	Affirmative	



5	Consumers Energy	James B Lewis	Affirmative	
5	Dairyland Power Coop.	Warren Schaefer	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Abstain	
5	Duke Energy	Robert Smith	Affirmative	
5	East Kentucky Power Coop.	Stephen Ricker		
5	Entergy Corporation	Stanley M Jaskot	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	<a href="#">View</a>
5	FPL Energy	Benjamin Church	Negative	<a href="#">View</a>
5	JEA	Donald Gilbert	Affirmative	
5	Kansas City Power & Light Co.	Scott Heidtbrink	Affirmative	
5	Liberty Electric Power LLC	Daniel Duff		
5	Lincoln Electric System	Dennis Florom	Affirmative	
5	Louisville Gas and Electric Co.	Charlie Martin	Affirmative	
5	Manitoba Hydro	Mark Aikens	Affirmative	
5	MidAmerican Energy Co.	Christopher Schneider	Abstain	
5	New York Power Authority	Gerald Mannarino	Affirmative	
5	Northern Indiana Public Service Co.	Michael K Wilkerson	Affirmative	
5	Northern States Power Co.	Liam Noailles	Affirmative	
5	Orlando Utilities Commission	Richard Kinas	Affirmative	
5	PacifiCorp Energy	David Godfrey	Affirmative	
5	Portland General Electric Co.	Gary L Tingley	Affirmative	
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	PSEG Power LLC	Thomas Piascik	Affirmative	
5	RRI Energy	Thomas J. Bradish	Negative	<a href="#">View</a>
5	Salt River Project	Glen Reeves	Negative	<a href="#">View</a>
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	South California Edison Company	Ahmad Sanati	Negative	
5	Southeastern Power Administration	Douglas Spencer	Affirmative	
5	Tampa Electric Co.	Frank L Busot	Affirmative	
5	Tenaska, Inc.	Scott M. Helyer	Abstain	
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	U.S. Bureau of Reclamation	Martin Bauer	Affirmative	
5	Wisconsin Electric Power Co.	Linda Horn	Affirmative	
5	Wisconsin Public Service Corp.	Leonard Rentmeester	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Ameren Energy Marketing Co.	Jennifer Richardson	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	Dominion Resources, Inc.	Louis S Slade	Abstain	
6	Duke Energy Carolina	Walter Yeager	Affirmative	
6	Entergy Services, Inc.	Terri F Benoit	Affirmative	
6	Eugene Water & Electric Board	Daniel Mark Bedbury		
6	FirstEnergy Solutions	Mark S Travaglianti	Affirmative	<a href="#">View</a>
6	Kansas City Power & Light Co.	Thomas Saitta	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Affirmative	
6	Louisville Gas and Electric Co.	Daryn Barker	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Affirmative	
6	Northern Indiana Public Service Co.	Joseph O'Brien	Affirmative	
6	PacifiCorp	Gregory D Maxfield	Affirmative	
6	Progress Energy	James Eckelkamp	Affirmative	
6	PSEG Energy Resources & Trade LLC	James D. Hebson	Affirmative	
6	Public Utility District No. 1 of Chelan County	Hugh A. Owen		
6	Salt River Project	Mike Hummel	Negative	<a href="#">View</a>
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak		
6	Southern California Edison Co.	Marcus V Lotto	Negative	
6	Tenaska Power Services Co.	Carolina M Price		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
8	Edward C Stein	Edward C Stein	Negative	
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Other	Michehl R. Gent		
8	Utility Services LLC	Brian Evans-Mongeon	Affirmative	
8	Volkman Consulting, Inc.	Terry Volkman	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Negative	
9	Commonwealth of Massachusetts Department	Donald E. Nelson	Affirmative	



	of Public Utilities			
9	Maine Public Utilities Commission	Jacob A McDermott	<a href="#">Abstain</a>	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	<a href="#">Affirmative</a>	
9	New York State Department of Public Service	Thomas G Dvorsky	<a href="#">Affirmative</a>	
9	Oregon Public Utility Commission	Jerome Murray	<a href="#">Negative</a>	<a href="#">View</a>
9	Public Service Commission of South Carolina	Philip Riley	<a href="#">Affirmative</a>	
9	Public Utilities Commission of Ohio	Klaus Lambeck	<a href="#">Abstain</a>	
9	Utah Public Service Commission	Ric Campbell	<a href="#">Negative</a>	
10	Electric Reliability Council of Texas, Inc.	Kent Saathoff	<a href="#">Affirmative</a>	
10	Florida Reliability Coordinating Council	Linda Campbell	<a href="#">Abstain</a>	
10	New York State Reliability Council	Alan Adamson	<a href="#">Affirmative</a>	
10	Northeast Power Coordinating Council, Inc.	Guy V. Zito	<a href="#">Affirmative</a>	
10	ReliabilityFirst Corporation	Jacque Smith	<a href="#">Affirmative</a>	
10	SERC Reliability Corporation	Carter B. Edge	<a href="#">Affirmative</a>	
10	Western Electricity Coordinating Council	Louise McCarren	<a href="#">Negative</a>	<a href="#">View</a>

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